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Implementation of the Lasater Clinical Judgment Rubric as a Progress Review Tool

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Abstract

The organization determined there was a lack of a standardized progress review tool to objectively evaluate nurses' clinical judgment during orientation. Further assessment determined gaps in communication between the preceptors and unit-based nursing education specialists (NESs), and a perceived lack of value in progress reviews. Tanner's (2006) review of nearly 200 nursing research articles determined a nurse's clinical judgments impact patient outcomes, making it imperative that organizations ensure their nurses have adequate clinical judgment to protect patients. Lasater's clinical judgment rubric (LCJR), based on Tanner's (2006) clinical judgment model was the only published tool found for assessing nurses' clinical judgment. A pilot project aims to implement the LCJR as a progress review tool to improve communication between preceptors and NESs, perceived value of the progress review process, and objective evaluation of nurse orientees' clinical judgment. The evidence demonstrates the LCJR is a valid and reliable tool which provides objective evaluation of a nurse's clinical judgment, a shared language, and value to the progress review process. NESs will educate preceptors on six pilot units for the use of the LCJR as a progress review tool, then trial the LCJR on the units for three months with newly hired nurses. Surveys designed to measure the three outcomes will be administered prior to implementation and three months after implementation to determine change. Qualitative data collected from open-ended questions on the post-pilot survey will provide data triangulation for quantitative data. If the LCJR is successful in improving value, communication, and objective evaluation, the plan is to implement across the department of nursing as a standard evaluation process for nurse orientees. The LCJR and Tanner's (2006) clinical judgment model would be integrated into preceptor training across the department.

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Problem/Issue

Healthcare organizations must determine registered nurse (RN) orientee competency to practice in the clinical setting. While the use of a skills-based or other type of checklist aids in determining RN skill level and ability to perform tasks, nurses may not possess the required clinical judgment skills to effectively and safely practice in the clinical setting (del Bueno, 2005; Fenske, Harris, Aebersold, & Hartman, 2013). Developing and evaluating clinical judgment is vital for nurses to provide care to increasingly complex patients (Lasater, 2011).

Introduction to the Problem

The department of nursing (DON) of a large Midwestern tertiary healthcare center covers a multitude of practice and specialty areas that include emergency, critical, acute, procedural, clinic, community, and long-term care. Nursing Education Specialists (NESs) are assigned to units or work areas and are responsible for staff professional development, including orienting newly hired nurses and ensuring their competency to practice independently and provide safe patient care. A framework or tool that is flexible enough to be used in all clinical areas is vital to ensure departmental consistency in evaluating nurse orientees' clinical judgment and competency to practice safely. Use of a standardized tool or framework to assess orientees' progress has demonstrated improved preceptor confidence, improved communication between preceptor and orientee, and improved ability to objectively evaluate an orientee's competence (Nielsen, Lasater, & Stock, 2016; Wilburn, Jones, & Hamilton, 2018).

Currently, the department uses a tiered skills acquisition model (TSAM) along with progress reviews to determine an orientee's readiness to practice. The TSAM focuses on building on skills, starting with basic skills, such as taking vital signs and performing a head to

toe assessment, but does not provide a method for evaluating an orientee's ability to think critically or make sound clinical judgments.

NES-identified problems.

Currently, no standardized progress review framework or tool to assist in evaluating clinical judgment is in use across the DON (Project Mentor, personal communication, November 6, 2018). The most common progress review form in use asks the preceptor to rate an orientee's level of independence performing skills-based tasks on a Likert scale from requiring full preceptor support to being fully independent. NES-identified issues with this tool include a lack of objectivity and the use of a married-state model within the TSAM which requires the preceptor to be by the orientee's side at all times making judging independence an inaccurate measure of an orientee's readiness to practice (NES interview, August 6, 2019). Additionally, the NESs identified a gap in clinical judgment skills in orientees and a communication barrier between preceptors and NESs to accurately and objectively identify clinical judgment concerns (Project Mentor, personal communication, November 6, 2018).

Several inpatient units, primarily intensive or progressive care units, identified they use the Lasater Clinical Judgment Rubric (LCJR) in some form within their progress reviews of orientees (Department of Nursing, Education and Professional Development (EPD) Division meeting, February 20, 2019). To learn more about the problems NESs identified and use of the LCJR, NESs were surveyed in May 2019 regarding their use of the LCJR, confidence in determining their orientees' clinical judgment, and confidence in their preceptors' abilities to communicate clinical judgment concerns to the nursing leadership team (NLT) (Appendix A). Five of the 72 NESs who responded report currently using some form of the LCJR for orientation progress reviews.

Two survey questions addressed orientees not meeting expectations (NME). The NME process requires alerting of human resources and daily documentation of the orientee's progress in the performance improvement plan the NLT puts into place. For those who had experience with an orientee not meeting expectations, they were asked to briefly describe the reasons. Of the 28 descriptions of why orientees were NME, 26 responses indicated clinical judgment concerns when analyzed against Tanner's (2006) clinical judgment model's domains of noticing, interpreting, responding, and reflecting. The other two responses did not provide enough information to be able to determine any relationship to clinical judgment.

Preceptor-identified problems.

Preceptors noted uncertainty about how to describe specific ways an orientee is struggling when the problem is not skills-based, which is the focus of the TSAM. For those preceptors on units using the LCJR, the DNP student asked preceptors to talk her through how they used it. Preceptors voiced they did not realize they were using the LCJR and they had no training on its use and did not read the language within the rubric to determine how an orientee should be evaluated. Because of their lack of training, they were not evaluating orientees objectively, though they had access to a more objective tool. Additionally, preceptors identified a lack of value in the current progress review process. When asked, many expressed they did not find the evaluation tools helpful to identifying an orientee's strengths or weaknesses and the progress review meetings did not result in a concrete plan to address issues most of the time. Some expressed progress reviews were a waste of their time (personal communications, March 2019 to August 2019).

The current progress review process garners inadequate input from the preceptor on the orientee's progress, resulting in the NES's inability to develop a comprehensive and

individualized orientation plan to address an orientee's areas of weakness (NES interview, August 27, 2019). Using an evidence-based method for evaluating an orientee's clinical judgment could help tailor the orientation to the individual needs of the nurse, improve clinical judgment skills before the nurse enters independent practice, and increase the value perception of the progress review process for preceptors and NESs.

Purpose of the Project

The goal of the department of nursing is to implement an evidence-based progress review tool or framework to evaluate an orientee's clinical judgment skills in order to ensure these orientees are competent and safe to practice independently (Project Mentor, personal communication, October 30, 2018). The current project is aimed at identifying an evidence-based tool for evaluating clinical judgment in nurses and piloting the tool on a small cohort of units within the department.

Clinical Practice Question

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model will guide the project. The first step for this model is to develop a practice question using the PICOT format, where P is the population, I is the intervention, C is the comparison, O is the outcomes, and T is the timeframe (Dang & Dearholt, 2018). The initial practice question was, "For RN orientees at a large Midwestern tertiary healthcare center (P), does using a framework to guide evaluation of the orientee's clinical judgment in the areas of noticing, interpreting, responding, and reflecting (I), compared to current practice of using a tiered skills acquisition model (C), improve Nursing Education Specialists' confidence in evaluating orientee clinical judgment, decrease need for remediation or extended orientation time, and increase preceptor confidence in evaluating orientees' clinical judgment and orientees' confidence in their clinical judgment (O)?"

The practice question went through several iterations during the readiness for change assessment process as the project team realized the scope of the larger project was too big for an initial pilot. Thus the practice question was revised to, "For preceptors and NESs on the pilot units (P), how does using the Lasater Clinical Judgment Rubric (LCJR) as an orientee progress review form (I) compared to their current orientee progress review form (C) affect their perceived value of the progress review (O.1), ability to clearly communicate orientee needs and orientation plans (O.2), and ability to objectively evaluate their orientee's clinical judgment (O.3) after three months of use (T)?"

Definition of Terms

The definitions of critical thinking, clinical reasoning, and clinical judgment are provided to help in understanding terminology used throughout the project proposal paper and why distinctions are made between the three terms. Clinical judgment is interrelated but not synonymous to critical thinking or clinical reasoning, though the literature often uses the three terms interchangeably, so these three terms are defined (Victor-Chmil, 2013). Additionally, the terms shared language, objectivity, and value are defined in relation to this project as they are identified as outcomes to be addressed by the pilot.

Critical thinking.

Critical thinking is the mental and intellectual process of applying knowledge to a problem that is not dependent on the situation (Victor-Chmil, 2013).

Clinical reasoning.

Clinical reasoning applies critical thinking to the clinical situation and requires the nurse to determine if and how the evidence is relevant to a patient (Victor-Chmil, 2013).

Clinical judgment.

Tanner (2006) defined clinical judgment as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (p. 204). Clinical judgment encompasses the nurse's critical thinking, clinical reasoning, psychomotor skills, personal experiences and knowledge of the individual patient (Tanner, 2006).

Shared language.

Lasater (2011) notes that the concept of clinical judgment is complex but critical and can be difficult to discuss if preceptors, NESs, and orientees are not using the same terms and phrases to describe clinical judgment. Shared language in this project refers to the framework and common terms provided by Tanner's clinical judgment model and the LCJR to elicit discussion on clinical judgment.

Objectivity.

Current progress review tools in use across the department of nursing are subjective in nature and preceptors may rate their orientees differently depending on many factors. Objectivity refers to inter-rater reliability, where one preceptor will rate an orientee the same as another preceptor. It also refers to preceptors using a standardized tool with standardized language to evaluate their orientees, rather than making subjective determinations based on personal standards or definitions of levels of skill, such as "expert" or "beginning."

Value.

Value in this project refers to preceptors and NESs receiving feedback from each other on an orientee's clinical judgment skills and orientation plan in a way that provides meaning to the progress review form and creates a valuable experience in the progress review process.

Evidence

The following sections present evidence supporting the implementation of a clinical judgment evaluation tool—specifically, the LCJR. The literature, including search strategy and results, then organizational evidence is discussed.

Search Strategy

The JHNEBP model guided the literature search and resultant review, appraisal, and synthesis. The model provides tools and steps that are helpful in conducting a search for evidence, including listing out the elements of the evidence-based practice (EBP) question into the population-intervention-comparison-outcomes-time (PICOT) format, determining appropriate databases to search, and the use of Boolean operators to search multiple terms (Dang & Dearholt, 2018). Terms related to the PICOT elements were included in the search, and as literature revealed additional related terms, these were added to the list of searchable terms.

Initial search and review.

The initial literature search was completed by the DNP student in October and November 2018 (Appendix B, Table B1). The Cumulative Index of Nursing and Allied Health Literature (CINAHL) was searched using Winona State University's (WSU) subscription. WSU's subscription allowed articles indexed but not available in CINAHL to be retrieved from other databases WSU subscribes to, including Nursing Collection@OVID, ScienceDirect, and Proquest Nursing Collection. A total of 12 articles not available through WSU's subscriptions

were requested through inter-library loans (ILL). Nine articles from the DNP Mentor's literature tables were reviewed, as well. The searches were limited to English language, published between 2004 to 2018.

Article titles were screened for relevance to the PICOT question. This step yielded 74 articles for closer review. Abstracts were then reviewed. Abstracts that addressed evaluating clinical judgment, clinical reasoning, or critical thinking in nurses or nursing students were kept for the final review. Thirty articles were included in the final review as being relevant to the PICOT question and, as the evidence-base grew, new information not found in previously reviewed and included articles (see Appendix C, Figure C1 for decision tree). One article was eliminated after this step when the evidence was evaluated as low quality, either C or D, according to the JHNEBP level and quality of evidence rating system (Appendix D).

Updated search and review.

The literature search was updated in October 2019 (Appendix B, Table B2). Articles were reviewed for relevancy similarly to the first search: titles were screened first, then abstracts, then full articles. A total of 73 articles were reviewed after the initial title screen. Articles were included if they addressed the updated PICOT question and provided new information that would change or enhance the project (see Appendix C, Figure C2). A total of 15 articles were included from the updated literature search. Searches were limited to English language, published since November 2018 for updating the original search, while searches relating to the updated PICOT question and educating preceptors included articles from 2009 to 2019.

A final review of the 44 articles included for the original and updated PICOT question reduced the number to 29 articles. The final review excluded articles if they did not clearly provide strong evidence to support either the original or revised PICOT question, if they did not

provide new information, or if their quality of evidence was not an A or B on the JHNEBP level and quality of evidence rating system (Appendix D). Dissertations were also eliminated at this stage as they were not from peer reviewed sources.

Review of Evidence

A total of 29 articles were included in the final review and appraised using the JHNEBP tools. The JHNEBP level and quality of evidence rating system was used to evaluate the level and quality of the evidence (Appendix D). The rating system has five levels of evidence: level I includes experimental studies, level II includes quasi-experimental studies, level III includes nonexperimental and most mixed methods studies, level IV includes clinical practice guidelines or consensus panels/position statements, and level V includes integrative reviews, literature reviews, quality improvement projects, and expert opinion. Each article was appraised for relevancy and quality and level of evidence using the JHNEBP research and non-research evidence appraisal tools (Appendix E), then placed into a horizontal version of the JHNEBP individual evidence summary tool, a literature review table (Appendix F).

The DNP student found no clinical practice guidelines or position statements. Additionally, no meta-analyses or meta-syntheses were found. One systematic review (Cappelletti, Engel, & Prentice, 2014) and three integrative reviews (Schuelke & Barnason, 2017; Tanner, 2006; Victor-Chmil & Larew, 2013) were included and appraised for quality using the evidence appraisal tool from JHNEBP and are included in Appendix E. Eleven research studies were found (Chan et al., 2019; Chen et al., 2017; Fenske et al., 2013; Hines & Wood, 2016; Lasater, 2007; Lasater, Nielsen, Stock, & Ostrogorsky, 2015; Lusk Monagle, Lasater, Stoyles, & Dieckmann, 2018; Nielsen, Lasater, & Stock, 2016; Steffan & Goodin, 2010; Stuedemann Fedko & Thomas Dreifuerst, 2017; Wilburn, Jones, & Hamilton, 2018) and are

reviewed in the following section. The remainder of the literature evidence includes 14 articles that are expert opinion (Cook, 2016; Dickison, Haerling, & Lasater, 2019; Lasater, 2011; Modic, 2014; Modic & Schoessler, 2013a; Modic & Schoessler, 2013b; Modic & Schoessler, 2014a; Modic & Schoessler, 2014b; Victor-Chmil, 2013), quality improvement projects (Durkin, 2010), program evaluations (Condrey, 2015; Dillard et al., 2009), and literature reviews (Adamson, Gubrud, Sideras, & Lasater, 2011; Miraglia & Asselin, 2015).

Systematic and integrative reviews.

Tanner (2006) conducted an in-depth review of 191 research studies on clinical judgment in nursing to draw conclusions on what is involved in a nurse's clinical judgment and to present a clinical judgment model (CJM). It lacks an in-depth review of study limitations but provides broad statements on limitations found in the literature. Clearly stated conclusions were backed up by a significant body of evidence from over two decades of research (Tanner, 2006). A more detailed description of the article is discussed later in the document.

The systematic review by Cappelletti et al. (2014) assessed quantitative and qualitative research to determine if the body of research still supported Tanner's (2006) clinical judgment model (CJM). The review detailed a rigorous appraisal method and presented clear literature search strategies and inclusion criteria. Studies included in the review were detailed and conclusions were based on the evidence. The reviewers concluded the research continues to support Tanner's CJM with the addition that education strategies to improve clinical judgment may influence what a nurse brings to a clinical situation. However, the review failed to address included studies' limitations and how they were addressed (Cappelletti et al., 2014).

Schuelke and Barnason (2017) conducted an integrative review of interventions used to develop critical thinking in new graduate nurses by nurse preceptors. However, they stated they

performed a systematic review. Based on JHNEBP evaluation criteria, if the review does not employ a comprehensive search of the literature and a rigorous appraisal method but does note gaps in the literature and compares themes, it is considered an integrative review (Dang & Dearholt, 2018).

Victor-Chmil and Larew (2013) examined the body of evidence supporting the reliability and validity of the LCJR, which is based on Tanner's CJM. They review several types of evidence, including poster presentations, abstracts, dissertations, and peer-reviewed articles and note gaps and inconsistencies in the evidence. Recommendations to further test the LCJR's reliability and validity were provided (Victor-Chmil & Larew, 2013).

Overall, the reviews are A quality on the evidence level and quality guide (Appendix D), indicating high quality reviews. Conclusions are definitively drawn, search strategies and evidence appraisal methods are clearly outlined, and the literature reviewed is comprehensive across the four reviews (Cappelletti et al., 2014; Schuelke & Barnason, 2017; Tanner, 2006; Victor-Chmil & Larew, 2013).

Research evidence.

Eleven research studies were included in the final review (Chan et al., 2019; Chen et al., 2017; Fenske et al., 2013; Hines & Wood, 2016; Lasater, 2007; Lasater et al., 2015; Lusk Monagle et al., 2018; Nielsen et al., 2016; Steffan & Goodin, 2010; Stuedemann Fedko & Thomas Dreifuerst, 2017; Wilburn et al., 2018). Five articles focused on evaluating preceptors (Chan et al., 2019; Chen et al., 2017; Nielsen et al., 2016; Steffan & Goodin, 2010; Wilburn et al., 2018), while the remaining six studies focused on evaluation of nurses' clinical judgment or competence (Fenske et al., 2013; Hines & Wood, 2016; Lasater, 2007; Lasater et al., 2015; Lusk Monagle et al., 2018; Stuedemann Fedko & Thomas Dreifuerst, 2017).

Evidence evaluating preceptors.

Five studies focused on assessing preceptors, though the focus varied for each study. Chan et al. (2019) assessed clinical teaching behaviors of preceptors and their learning needs, finding that only 43.5% of preceptors agreed or strongly agreed their evaluations of orientees on the evaluation form were objective. Additionally, they found the top two topics identified by preceptors as learning needs were "How to teach: Critical thinking" (30.4%) and "How to teach: Prioritizing" (27.3%). Chen et al. (2017) compared competence evaluations between preceptor-preceptee pairs and found that those preceptors with more experience rated their preceptee's competence significantly lower than the preceptee ($\beta = .35$, $p < .01$). More experienced nurses may have higher standards or expectations for a novice nurse's competence level than preceptors with less experience (Chen et al., 2017).

Nielsen et al. (2016) implemented a modified LCJR, Steffan and Goodin (2010) implemented a tool based on Benner's novice to expert model, and Wilburn et al. (2018) implemented the Norwegian Nurse Competence Scale (NNCS); all studies evaluated preceptors' perceptions of the tools. All three studies found preceptors felt the tools enhanced objective evaluation of orientees, and Steffan and Goodin (2010) and Wilburn et al. (2018) both found preceptors felt the tools would be easy to use. Preceptors using the LCJR agreed a framework increased value in the evaluation of an orientee's progress and was helpful in providing relevant feedback and goal setting (Nielsen et al., 2016).

Evidence evaluating nurses' clinical judgment.

The studies are evenly divided between studying licensed nurses (Fenske et al., 2013; Lasater et al., 2015; Lusk Monagle et al., 2018) and nursing students (Hines & Wood, 2016; Lasater, 2007; Stuedemann Fedko & Thomas Dreifuerst, 2017). Lasater (2007) developed a

rubric based on Tanner's (2006) CJM with the intent of being able to evaluate a nursing student's level of clinical judgment. Through a cyclical process, the rubric was developed and refined to further define what each clinical judgment domain means. The study resulted in creating a rubric with 11 dimensions scored along four developmental levels: beginning, developing, accomplished, and exemplary, and is discussed in more detail later (Lasater, 2007).

Two studies found that nurses with more than one year of nursing experience scored higher on the LCJR, indicating higher levels of clinical judgment (Fenske et al., 2013; Lasater et al., 2015). Fenske et al. (2013) demonstrated that nurses, especially less experienced nurses, were likely to rate themselves higher on the LCJR than their actual performance warranted. Lasater et al. (2015) used the orientees' LCJR scores to develop individualized orientation plans to address any dimension that was scored as beginning or developing which resulted in six of the 10 nurses meeting that criteria to be meeting or exceeding expectations by 10 months post-hire. Stuedemann Fedko and Thomas Dreifuerst (2017) determined students' scores on the LCJR during a simulated scenario moderately correlated with their actions based on a predetermined list of nursing actions for the scenario ($r = .36$, $p = .04$).

Hines and Wood (2016) used clinical judgment scripts based on Tanner's CJM to debrief nursing students after simulation and clinical, while Lusk Monagle et al. (2018) used the LCJR as a framework to provide structured reflection sessions for new graduate nurses (NGNs) to reflect on their practice during their first year of employment. Both saw an improvement in reflection abilities and ability to notice, while Hines and Wood (2016) also saw an improvement in interpretation skills, and Lusk Monagle et al. (2018) found NGNs reported enhanced communication, interprofessional support, and a better ability to anticipate issues in complex patients.

Non-research evidence.

Fourteen articles considered Level V evidence (Appendix D) were included as evidence for the current project. There were three literature reviews, one quality improvement project, two program evaluations, and nine expert opinion articles.

Discussion of concepts, models, and the LCJR.

Victor-Chmil (2013) reviewed the literature to determine the difference between critical thinking, clinical reasoning, and clinical judgment as these terms are often used interchangeably yet are not the same concepts. The definitions of these terms are provided in the relevant section. The author notes that critical thinking is not discipline-specific, so does not require a nursing-specific tool to measure it. Additionally, critical thinking tools and clinical judgment tools have demonstrated no significant relationship, thus the current project should be mindful of the definitions of each term and that the LCJR does not measure critical thinking but clinical judgment only.

The National Council of State Boards of Nursing (NCSBN) developed a clinical judgment model (NCSBN-CJM) to provide a framework for evaluating clinical judgment across educational and clinical settings (Dickison et al., 2019). The NCSBN-CJM provides a more detailed model of clinical judgment than Tanner's (2006) CJM. Environmental and individual context (e.g., organizational resources & nurse's knowledge & skill) affect the nurse's ability recognize and analyze cues, etc. to form, refine, and evaluate hypotheses, which all work together to create clinical judgments, leading to clinical decisions to meet client needs (Dickison et al., 2019). Use of this model would be premature, however, because it has not been tested yet in research studies, so Tanner's (2006) CJM will be used for this project.

Adamson et al. (2011) reviewed three studies that tested the reliability and validity of the LCJR. Miraglia and Asselin (2015) agreed with Adamson et al.'s (2011) conclusions that the LCJR is a valid tool but interrater reliability is affected by the amount of training and consistency of the rater or scenario and how data were collected. However, most studies reviewed by Adamson et al. (2011) and Miraglia and Asselin (2015) report high levels of interrater reliability of the LCJR, which leads to the conclusion that it can likely provide a more objective measure of an orientee's clinical judgment than a non-standardized method.

Project implementation and change management strategies.

Ongoing support for faculty who attended a workshop on clinical judgment and training on the LCJR, as well as reinforcement, is necessary to create and sustain change (Dillard et al.; 2009). Incorporating language from the clinical judgment rubric and model into course syllabi and evaluation forms was recommended to create a new normal (Dillard et al., 2009). Durkin (2010) found similar needs to establish a new normal upon implementing a new progress review tool for nurse orientees. Preceptors attended a workshop on the new tool and practiced scoring, then received weekly support and education on the units via weekly forums. Leadership teams supported preceptors by allowing protected time for preceptors to complete the tool on the orientee weekly and designating a lead preceptor when multiple preceptors were used for an orientee.

Condrey (2015) detailed results from implementing a new preceptor training program using online modules followed by a four-hour in-person class. Advertisement of the new program occurred by handing out flyers, unit-to-unit visits, and unit managers recruiting preceptors. Preceptors who completed all three online modules and the class reported a strong perception of support (mean 4.19 out of 5, $SD = 0.74$), and a perception of support was strongly

correlated to preceptor role commitment ($r = 0.668$, $p = 0.009$). Condrey's (2015) report of recruitment efforts, implementing contact hours for the modules and class, and cost-benefit analysis was used to inform implementation of the current project.

Important educational strategies and considerations.

The LCJR provides a common language which allows the orientee, preceptor, and educator to "discuss a complex but critical topic" (Lasater, 2011, p. 87). Using higher level questions framed within the LCJR's dimensions can assist in developing the orientee's clinical judgment in a specific area (Lasater, 2011; Modic, 2014; Modic, & Schoessler, M., 2013a; Modic & Schoessler, 2013b; Modic & Schoessler, 2014a; Modic & Schoessler, 2014b). These questions can also assist in determining where an orientee is struggling (Modic & Shoessler, 2013a). Using the "think aloud" strategy where the preceptor or orientee talks through everything they do allows for the orientee or preceptor to learn the thought process behind actions and interpretations of the other person (Cook, 2016).

Additional strategies to eliciting an orientee's clinical judgment level or teach clinical judgment include role-modeling (Modic, 2014), designing learning experiences to help an orientee develop background knowledge and contextual knowledge (Modic & Schoessler, 2013b), and asking "why" questions and using case-based learning to develop skills in interpretation (Modic & Schoessler, 2014a). Modic and Schoessler (2013b) emphasize the need for bedside shift hand-off to provide a comparison between the orientee's perceptions and the off-going nurse's perceptions, establishing a baseline knowledge of the patient. To develop skilled responding, Modic and Schoessler (2014b) note the orientee must learn to account for patient needs, their personal skills and resources, and timing, resources, and skills of the organization and team. Preceptors can reinforce knowledge the orientee already has, then walk

the orientee through the process, including finding and utilizing resources within the organization, preparing the patient for the experience, and anticipating patient response. Asking "what if" questions helps the orientee begin the reflection process and elicits further depth and flexibility of thinking (Cook, 2016; Modic & Schoessler, 2014b). Cook (2016) also recommends anchoring the orientee in their current knowledge, then adding additional knowledge, having the orientee apply the skill, and leading them through reflection on their actions to facilitate application to future scenarios.

Evaluation of the Evidence and Effectiveness of Intervention Studies

The lack of a standardized process and objective tool to evaluate an orientee's clinical judgment, a lack of a shared language to discuss an orientee's clinical judgment, and a perceived lack of value in the progress review process are the identified problems driving this project (Project Mentor, personal communication, November 6, 2018). Tanner's (2006) review of nearly 200 nursing research articles determined a nurse's clinical judgments impact patient outcomes, making it imperative that organizations ensure their nurses have adequate clinical judgment to protect their patients. The survey of NESs supported this by providing reasons for nurses not meeting expectations in orientation that were related to clinical judgment.

Lasater's clinical judgment rubric provides a valid and reliable method for measuring a nurse's clinical judgment (Adamson et al., 2011; Miraglia & Asselin, 2015; Victor-Chmil & Larew, 2013), as well as a common language for NESs, preceptors, and orientees to use when discussing progress and areas for improvement (Dillard et al., 2009; Hines & Wood, 2016; Lasater, 2007; Lasater, 2011; Lasater et al., 2015; Lusk Monagle et al., 2018; Miraglia & Asselin, 2015; Nielsen et al., 2016). Having an objective and standardized evaluation tool provides value to the progress review process and helps create an individualized orientation plan

to address orientee areas for improvement (Durkin, 2010; Lasater et al., 2015; Nielsen et al., 2016; Steffan & Goodin, 2010; Wilburn et al., 2018).

When evaluating the quality of the evidence to determine if a practice change is recommended, the JHNEBP recommends including only A or B quality evidence and proceeding cautiously if the body of evidence is not primarily Level I or Level II evidence (Dang & Dearholt, 2018). Four of the 29 articles included are Level I or Level II, eight are Level III, and 17 are Level V. Appendix G addresses effectiveness of the body of evidence per the JHNEBP model. The strength of evidence indicates good and consistent evidence to move forward with the intervention as a pilot (see Appendix G, Table G1) (Dang & Dearholt, 2018). Using the LCJR as an evaluation tool to determine a nurse's clinical judgment is effective and supported by three studies (Fenske et al., 2013; Lasater et al., 2015; Nielsen et al., 2016). The use of the LCJR as a framework to develop clinical judgment is possibly effective and supported by three more studies (Dillard et al., 2009; Hines & Wood, 2016; Lusk Monagle et al., 2018). Use of the NNCS as a standardized tool to evaluate nurse orientees' competence is possibly effective and supported by Wilburn et al. (2018).

Gaps in the literature.

While the evidence supports the effectiveness of using the LCJR as an evaluation tool, there are gaps in the literature, creating limitations to the strength of the body of evidence. Clinical judgment is a complex concept and the use of critical thinking and clinical reasoning as synonymous terms when they are not synonymous concepts makes it difficult to consistently define and thus measure (Cappelletti et al., 2014; Lasater, 2011; Tanner, 2006; Victer-Chmil, 2013). The new NCSBN-CJM, while more comprehensive than Tanner's (2006) CJM, has not been tested in research studies or used as a framework for a study using the LCJR, so is not used

in this project. Other tools found in the literature, including the NNCS, do not specifically evaluate clinical judgment so were not considered for this project. The LCJR is the only tool found in the literature to evaluate and measure constructs of clinical judgment. The LCJR has a growing body of research to support its use as a tool to evaluate and support development of clinical judgment, however there are limited studies that have applied the LCJR to licensed nurses. Most research studies have focused on nursing students. The DNP student did not find studies that use the LCJR specifically to evaluate nurse orientee clinical judgment to determine if the nurse is ready to practice independently off orientation—the intended use of the tool in the current project. However, Nielsen et al. (2016) implemented the LCJR as a framework for preceptors to use to evaluate orientee performance and improve the quality of feedback preceptors were able to give to their orientees.

Theoretical Basis

Tanner's (2006) clinical judgment model forms the theoretical basis for the project. Tanner (2006) developed the CJM based on an analysis of over two decades of nursing research on clinical judgment. Five conclusions were drawn from the extensive review, including (a) what the nurse brings to a situation influences clinical judgments more than objective data about the current situation; (b) the extent to which the nurse knows the patient and their typical responses impacts clinical judgments; (c) the context of the situation, such as work environment and culture, influences clinical judgments; (d) a variety of reasoning patters are used by nurses either alone or in combination; and (e) reflection on practice is often prompted due to a breakdown in clinical judgment and is necessary to develop clinical knowledge (Tanner, 2006).

The CJM contains four domains: noticing, interpreting, responding, and reflecting. Noticing encompasses the current context, the nurse's background, relationship with the patient,

expectations, and initial grasp of the situation. Interpreting uses analytic processes, intuition, and narrative thought to determine how to respond. Responding is the action (or inaction) the nurse decides to take. Reflecting is reflection-in-action, where the nurse makes adjustments in the moment to the intervention based on patient response, and reflection-on-action, where the nurse reflects on the situation, judgments, and responses and increases clinical learning (Tanner, 2006). Tanner's (2006) model has been used and tested frequently in the literature to evaluate nursing students, new graduate nurses, and new nurse hires to determine competency in clinical judgment (Dillard et al., 2009; Fenske et al., 2013; Hines & Wood, 2016; Lasater, 2007; Lasater et al., 2015; Lusk Monagle et al., 2018; Nielsen et al., 2016; Stuedemann Fedko & Thomas Dreifuerst, 2017).

Lasater (2007) operationalized Tanner's CJM to evaluate clinical judgment. The LCJR allows quantitative evaluation of aspects of clinical judgment (noticing, interpreting, responding, and reflecting) in nurses and nursing students and expands Tanner's four domains to include 11 dimensions which provide detailed indicators of what each domain encompasses (see Appendix H). Departmental stakeholders support the choice of Tanner's model and the LCJR as the framework and tool to evaluate clinical judgment of nurse orientees due to the evidence base supporting their relevance to the clinical problem and permission from Dr. Lasater to use the tool for free as long as credit is given on the tool (Appendix I) (initial stakeholder meeting, February 6, 2019).

Plan for Application of the Evidence

Stakeholders identified early the preferred tool is the LCJR (Initial stakeholder meeting, February 6, 2019). NESs from the progressive care units and the medical cardiac intensive care unit stated they currently use the LCJR as the framework to conduct progress reviews. Thus, the

clinical question was quickly revised to focus the literature review on the LCJR and its theoretical base, Tanner's CJM. During the assessment of readiness to change and evaluation of the evidence supporting the use of the LCJR as a progress review tool, concerns regarding the scope of the project arose.

Identification of the Problem

The LCJR is designed to evaluate a nurse on a single care episode rather than an aggregate of patient care shifts (Lasater, 2007; Lasater, 2011). Lasater (Appendix I, personal communication, January 23, 2019) states using the tool to evaluate the orientee over multiple points in time has been found to be most useful. Using a progress review tool in this fashion will require the pilot units to implement a radical change from the current process (Project mentor, personal communication, August 1, 2019). Currently, preceptors fill out a unit-specified progress review form on the orientee's performance over time on the day of the progress review. Preceptors will now need to complete the LCJR on the orientee over several points in time throughout orientation to determine progress. It must be noted the literature search did not reveal any published studies that have used the LCJR in the same way the pilot project proposes. Nielsen et al. (2016) described the most similar use, where they implemented a modified LCJR to score new graduate nurses on their answers to three different case studies. The new nurses' results were shared with their preceptors who then used the results to focus interventions for improving clinical judgment through orientation (Nielsen et al., 2016). Also, Wilburn et al. (2018) implemented the NNCS similarly to how this project will implement the LCJR. Otherwise, the literature is focused primarily on the use of the LCJR with nursing students or new graduate nurses and not on the use of the LCJR by preceptors.

Due to the scope of the change needed to successfully implement the tool, it was determined with the project mentor, project advisor, and other stakeholders that more than one pilot will likely need to occur. Thus, the scope of the present project was narrowed to focus on a 12 week (three-month) pilot and the change strategies to implement the pilot, including educating preceptors on the new tool. As stated earlier, the revised clinical question is "For preceptors and NESs on the pilot units (P), how does using the Lasater Clinical Judgment Rubric (LCJR) as an orientee progress review form (I) compared to their current orientee progress review form (C) affect their perceived value of the progress review (O.1), ability to clearly communicate orientee needs and orientation plans (O.2), and ability to objectively evaluate their orientee's clinical judgment after three months of use (T)?"

Feasibility of Implementing the LCJR

Lewin's seminal work on change theory in the 1940s introduced the model of "unfreeze, change, refreeze" which leads the organization to determine the need and motivation for the change and challenge the status quo as part of the first step, unfreezing (MindTools, 2018). Creating an emotional hook to get people on board with the change will be an important beginning step: Make what is currently done questionable and no longer acceptable to continue. Next comes the actual project implementation—the change—which needs to be managed and continually promoted and monitored for compliance. Change is not easy and there will be push-back from late-adopters.

Upon assessment of feasibility by the project lead and mentor, multiple facilitators were determined to exist to ensure the success and feasibility of the project. Providing education to the NESs and preceptors was included as part of the initial project scope and study of feasibility.

Nursing leadership is supportive of the addition of a standardized tool to orientee progress reviews. The Nurse Administrator of Education and Professional Development (EPD) division is supportive of and excited for the project (personal communication, February 6, 2019). Additionally, the planning, assessment, collaboration, and evaluation (PACE) steering committee, tasked with overseeing nursing orientation across the health system, has provided valuable support, agenda time, feedback, and input into the project's beginning stages. Overall, leadership, NESs, and preceptors interviewed by the project lead have expressed tremendous excitement regarding this project and an eagerness to implement the tool, requiring management of expectations regarding timeline, scope, and appropriate change management.

Providing education on the LCJR is part of the unfreezing step of Lewin's change process, as education will provide preceptors with the "why" of the change: why the current progress review form and process does not work well and why the LCJR will be better (MindTools, 2018). The literature supports educating preceptors using the LCJR on the theoretical framework and use of the tool (Adamson et al., 2011; Dillard et al., 2009; Durkin, 2010; Nielsen et al., 2016). Due to feasibility of budgeting off-unit time for preceptors, the length of the proposed preceptor training (an online module followed by a one-hour class) on the LCJR is less than what the evidence supports (several online modules or several hours of training and practice rating scenarios). To help offset the reduced education time, the DNP student and project mentor will train the NESs involved in the pilot to ensure their readiness to lead the preceptor classes and provide on-unit support to their preceptors during the pilot. The DNP student will remain available during the pilot as a resource for preceptors and NESs, as well. The DNP student will schedule dates and times during the pilot that she will be available on-campus to round on the units and be available by phone or pager to respond to questions or

comments from preceptors or NESs. DNP student availability will be disseminated to the pilot units via email at least one week in advance, and reminders will be sent to unit charge nurses at the start of on-site availability each day.

Organizational infrastructure to support the change is in place, including appropriate committee structures, dedicated NES support of nursing units, a comprehensive orientation program, preceptor development classes, biannual preceptor workshops, an online learning platform (MyLearning), and an organizational culture supportive of EBP and quality improvement. Resources required to implement the project include printers, toner and paper, MyLearning, survey building and administration tools, software to create project infographics, nurse managers, NESs, administrative support, preceptors, orientees, and consultation with a statistician. Additionally, there is an education technology NES who is dedicated to producing quality, interactive education for the online learning platform. All these resources are available to the project, as well as large numbers of preceptors and orientees throughout the year due to the size of the institution. See Appendix G, Table G2 for an analysis of fit and feasibility using the JHNEBP Synthesis Process and Recommendations Tool and Appendix J for an evaluation of the structures, processes, and outcomes for implementation of the LCJR.

Benefits to implementing the LCJR include providing a shared language and more objective evaluation of an orientee's clinical judgment, increased perceived value of the progress review, preceptors able to provide better quality feedback to orientees, and clear expectations for performance with transparent evaluation criteria provided to orientees (shared language). Risks are minimal, and mostly relate to being able to sustain the change: The education provided to preceptors may not be sufficient to enable preceptors to use the tool as intended, thus they may revert to subjective evaluations of an orientee's progress.

There are no direct patient impacts or risks by implementing this tool; the impact will be in ensuring that nurses possess adequate clinical judgment skills prior to practicing independently. Assuming the pilot is successful and implementation is broadened to the entire nursing department, better patient outcomes are likely to result and be evidenced in unit-tracked nurse-sensitive patient indicators, such as identification of deteriorating patients, rates of falls, pressure injuries, and blood stream infections. The risk to patients is that practice remains the same as it is currently; in other words, the project has the potential to improve practice or have a null effect rather than cause potential harm.

Educating preceptors on the use of and implementing the LCJR as a progress review tool has demonstrated adequate feasibility to move forward with a pilot project. The LCJR is supported by the evidence as an appropriate, valid, and reliable tool to evaluate a nurse's clinical judgment as described by noticing, interpreting, responding, and reflecting (Adamson et al., 2011; Dillard et al., 2009; Fenske et al., 2013; Lasater, 2007; Lasater, 2011; Lasater et al., 2015; Miraglia & Asselin, 2015; Nielsen et al., 2016; Victor-Chmil & Larew, 2013). Providing education on and practicing the use of the LCJR is recommended by the evidence as appropriate change management (Cappelletti et al., 2014; Chan et al., 2019; Condrey, 2015; Cook, 2016; Dillard et al., 2009; Durkin, 2010; MindTools, 2018; Schuelke & Barnason, 2017).

Stakeholder Preferences

To ensure the project started out in the right direction, the DNP student garnered stakeholder input early in the process. Several nursing units within the department currently use the LCJR, and the department of nursing desires to implement it across the department and ultimately the enterprise (Department of nursing, EPD division meeting, February 20, 2019). During the initial stakeholder meeting, NES and preceptor feedback was positive on the goals of

the project as well as the LCJR (initial stakeholder meeting, February 6, 2019). Stakeholders commented that the LCJR "makes sense" and more than one should be completed during orientation. Initially, everyone agreed that if the LCJR is to be used, the orientee should meet criteria for "accomplished or exemplary" (see Appendix H) in all four domains (Initial stakeholder meeting, February 6, 2019). During the planning process for the pilot project, the DNP student, mentor, and pilot unit NESs identified this standard as unrealistic as the tool does not provide an evaluation of aggregated performance. The NESs will evaluate an orientee on a case-by-case basis during the pilot to determine readiness to practice independently off orientation using the LCJR tools completed by the preceptors and their own judgment.

Individual interviews with NESs and preceptors in May, August, and September 2019 indicated frustration with the lack of a standardized progress review tool and objective method for evaluating an orientee's clinical judgment. Several also noted they did not value or felt others did not value the progress review process or tool in use by their unit. When presented with the LCJR, all interviewees expressed excitement about the possibilities, including the ability to provide more specific feedback to orientees based on the rubric, having clear criteria for orientees to meet, and adding value to the formal progress review process. One preceptor noted her nursing program incorporated the LCJR throughout the program and she strongly valued the framework and transparent evaluation criteria it provided (personal communication, August 13, 2019).

Summary of Recommendations

Based on a review of the literature, stakeholder input, and organizational needs and priorities, the recommendations are to implement the LCJR as a progress review tool in a pilot of

six units and educate the preceptors in the pilot on the theoretical background and use of the tool. A more in-depth discussion of the plan for implementing the pilot is discussed below.

Plan for Implementing the LCJR

The aim of this project is to pilot the use of the LCJR in six different units representing three different care areas: outpatient care, inpatient general care, and inpatient critical care. The pilot will last three months in each unit and start dates will be staggered by each unit's planned education dates. Each unit NES will educate their preceptors using an online education module followed by a face-to-face session to practice using the LCJR and allow time for questions and answers. The online education module was developed by the DNP student and project mentor and takes approximately 30 minutes to complete. It identifies the problems that led to the project, provides an introduction to Tanner's CJM and the LCJR, then leads the learner through a case scenario where they practice rating an orientee using the LCJR. A brief test of knowledge concludes the module, along with resources for follow-up learning (see Appendix K for learning objectives and test questions). A teaching plan for the face-to-face sessions is included in Appendix L.

EBP implementation model.

The JHNEBP model is the EBP implementation model for this project because of the comprehensive tools it provides to aid in appropriate EBP translation efforts. Lewin's change model is used as an adjunct to ensure appropriate change management strategies were used throughout the project. The JHNEBP model provides step-by-step tools and instructions that nurses can use to implement EBP regardless of their experience level with the translation process (Dang & Dearholt, 2018). The process is divided into three steps: practice question, evidence, and translation (PET) (see Appendix M). The translation step first determines the fit, feasibility,

and appropriateness of the recommended change (see above). Then, an action plan is created, and resources are secured to implement the plan. Finally, the plan is implemented. The remainder of the translation steps include evaluation of the outcomes, reporting outcomes to stakeholders, identification of next steps, and broader dissemination of findings (Dang & Dearholt, 2018).

While the JHNEBP model provides recommendations for change management, the project mentor identified Lewin's change model as a helpful addition to ensure appropriate steps are taken to implement the change (Project mentor, personal communication, November 6, 2018). Unfreezing requires a change agent who identifies a problem and need for change, helping others see the need for change (Shirey, 2013). The project mentor has been the primary change agent within the department. The DNP student's role is to continue illuminating the problem and educate stakeholders on the proposed solution, addressing and solving concerns with the project so barriers do not stop the change. See Appendix N for implementation strategies for each stage of the change process of unfreezing, moving, and refreezing and Appendix O, Tables O1 and O2, for the action plan with critical milestones and associated tasks.

Pilot participants and unit care settings.

The department of nursing identified the importance of implementing a tool flexible enough to be used within all care areas so six units representing three different nursing practices (ambulatory/procedural, general inpatient care, and intensive care) are part of the initial pilot project (see Table 1). The project mentor solicited interested NESs to volunteer their units for the project which led to the selection of the medical intensive care unit (MICU), four general medical inpatient units, and the outpatient non-vascular radiology diagnostic areas (Table 1). These units were chosen due to the NESs' responses to the request for volunteers for the pilot

project. All active preceptors in the pilot units will be invited to participate in the pilot project and outcome measures. Active preceptors are those who have precepted an orientee at least one day in the past 12 months. In the post-survey, preceptors will be excluded if they did not use the LCJR with an orientee during the pilot. Providing professional development oversight to the six units are five NESs who will also participate in the pilot and outcome measures.

Table 1

Description of Units Involved in Pilot Project

Unit(s)	# Active[a] Preceptors (approx.)	# Projected Orientees in Spring 2020	Type of Patient Population Served
MICU	68	10	Acute intensive medical/ respiratory patients
General Medical Units (4)	79	17-22	Acute and chronic internal medicine patients with a variety of medical needs and illnesses as well as some post-procedural patients
Outpatient Radiology	16	2-6	Ambulatory clinic patients who need CT[b] or MRI[b]

[a]Active preceptors are those who have precepted at least one day in the last year. [b]CT = computerized tomography and MRI = magnetic resonance imaging.

Of note, the outpatient non-vascular radiology diagnostic areas are also being used by a local university's nursing program as a dedicated education unit (DEU). Implications include the potential for use of the LCJR with DEU students working with nurse clinical coaches who also precept newly hired nurses.

The organization's Institutional Review Board (IRB) considers this project to be a quality improvement project so does not need IRB approval (Appendix P). Approval to conduct the project will be sought from the Winona State University IRB and is expected to be deemed exempt due to the project's limited risks. Participants consent to be included in the pilot study by completing pre-implementation and post-implementation surveys (Appendix Q).

Participation in the data collection process is voluntary. Participants' identities (preceptors and NESs) will be kept confidential throughout the study and all survey results with unique identifiers will be maintained on a secure database.

Readiness for change.

Assessment of the nursing department's readiness to change the progress review process included identifying the problem, reviewing the evidence, determining the level of leadership support, and interviewing members of key stakeholder groups. The problem was identified as the inability to accurately and consistently evaluate a nursing orientee's clinical judgment during progress reviews. Discussions with NESs and preceptors illuminated further the lack of a shared language between the two groups, especially for newer preceptors, to describe where the orientee was struggling if it was not skills-based. While concerns were raised about adding another tool to the orientation process, everyone included in the assessment process agreed that a better way to evaluate clinical judgment is needed. Barriers and strategies to mitigate or overcome them are listed in Appendices M and N. Leadership within the department of nursing is supportive of the pilot project, including administrative and unit-level leadership. The department of nursing values evidence-based practice, standardization of practice whenever possible, and ensuring quality patient care (Mayo Clinic, n.d.; 2014). The department of nursing has plentiful resources in place to ensure the project succeeds, too, such as financial, human capital, time, and physical space.

Outcomes measurement.

The outcomes being measured in the pilot project are considered specific, measurable, attainable, and reasonable within the project's timeline. Other outcomes which could be evaluated as the LCJR continues to be piloted and implemented after the initial pilot project

include impact on the orientee and the patient. Impacts to the orientee include tracking changes in clinical judgment over the course of the orientation, changes in how individualized orientation plans are created based on the results of the LCJR, changes in the numbers of orientees not meeting expectations, and nurse employment rates over time. Impacts to patient outcomes may include improvement in nurse-sensitive indicators such as patient falls, pressure injury rates, use of restraints, and hospital-acquired infections. However, any improvement in nurse-sensitive outcomes will be difficult to correlate to the implementation of the LCJR and may be a result of the multi-factorial approach to quality improvement the organization uses to improve care and patient outcomes.

The three themes identified as problems during the readiness to change assessment are a lack of perceived value in the progress review process, a lack of a shared language between the NES and preceptor leading to unclear communication of orientee needs and plans, and lack of an objective progress review form to evaluate an orientee's clinical judgment. Thus, the pilot project is seeking to measure if the LCJR changes the (a) preceptor and NES perceived value of the progress review, (b) the ability to clearly communicate between the NES and preceptor orientee needs and plans for improvement, and (c) the ability to objectively evaluate an orientee's clinical judgment. Additionally, to collect data that could be useful in designing future pilots, the NESs will track the number of orientees who are oriented using the LCJR, those orientees' education level (associate, bachelor's, or master's degree), and number of years of nursing experience. No identifiable information, such as name or age, will be collected, and reporting will be on aggregate numbers.

Measurement tools.

The DNP student did not find measurement tools in the literature designed to measure the three themes identified for this pilot project. Therefore, the DNP student created two surveys, one for preceptors and one for NESs. Each survey is designed to collect demographic information and ask questions about each theme. Participants rate their level of agreement with statements on a 5-point Likert scale where 1 equals "strongly disagree" and 5 equals "strongly agree" (Appendix Q). Instructions for taking the survey note why the survey is being conducted, what it is designed to measure, and definitions of key terms used in the survey. Participants consent to participate by completing the survey.

Limitations of the survey include being created specifically for the pilot project and having no prior reliability or validity testing. To address content-related validity as well as internal consistency, the survey provides two statements per theme. The project leader consulted experts in nursing research to review each survey, as well as a panel of expert preceptors and a panel of expert NESs. These groups made suggestions for changes based on clarity and question structure, such as asking about two concepts in one question. The survey research center and a statistician within the organization were also consulted by the project leader and mentor to ensure the survey design, including scale used, is adequate to detect a difference. The survey research center also provided feedback on the demographic questions (personal communication, October 15, 2019). Testing of reliability prior to use in the pilot project is not feasible, thus reliability testing will occur when data is analyzed and will include a factor analysis.

The pilot project is a mixed methods explanatory pretest-posttest design, where the survey will be administered prior to implementing the LCJR and then three months after implementation has occurred to determine changes in the three themes. Thus, the questions

measuring each theme are designed so they do not need to be changed from pretest to posttest, eliminating a common threat to validity found in pretest-posttest designs (Burns & Grove, 2009). Questions between the preceptor and NES surveys are worded slightly differently, as each group has a different role in the progress review process.

The preceptor survey collects the following demographic data: experience as a registered nurse in years, years working on their current unit, years as a preceptor on their current unit, age in years, education level, and type of care area they work in. Experience as a nurse, years on their unit, and years as a preceptor are categorized based on Benner's novice to expert theory (Benner, 1984), which will allow comparison of results based on level of expertise. The NES survey asks the number of years of experience as a NES, as well as number of years supporting their current unit and the type of care area they support. Just as in the preceptor survey, the years of experience and at the current unit are categorized using Benner's theory.

Demographic questions will not be collected on the post-survey because participants in the pre-survey will be assigned a unique identifier so responses can be matched to the post-survey. Only matched pairs will be included in the data analysis. Additional open-ended questions will be asked on the post-survey to elicit qualitative information regarding the participant's perception of changes related to the three themes (shared language, objectivity, and value). Other questions ask about the participant's experiences using the LCJR, and advantages and disadvantages to the tool, and were taken from Nielsen et al.'s (2016) semi-structured interview questions. The DNP student obtained permission to use the questions from A. Nielsen (Appendix R). The open-ended questions will assist in triangulation of data and be used to inform future direction for the DON. If the project team does not receive enough quality responses from these questions, the DNP student will purposively sample preceptors from each

unit and conduct a semi-structured interview, using the open-ended survey questions as a guide. Quality responses are defined as offering enough information that themes can be identified during content analysis. At least one preceptor from each unit offering quality responses is the threshold for not conducting interviews.

To collect data on orientees, NESs will be given an electronic copy of a word processing document to fill out as they orient new nurses to their units using the LCJR (Appendix S). The information collected will include the orientee's years of experience as a registered nurse and current degree level (associate's, bachelor's, master's or doctorate). NESs will not collect names or other identifying information, including start dates of their orientees on these forms.

Data collection process and logistics.

Preceptor and NES surveys will be designed and managed using Research Electronic Data Capture (REDCap) tools hosted at the organization. REDCap is a secure, web-based software platform which supports data capture and allows automated export to common statistical packages (Harris et al., 2009; Harris et al., 2019). The DNP student will work with the nursing department's administrative assistant for REDCap surveys to design and administer the surveys in REDCap. The survey will be designed to provide a unique identifier to each participant, allowing for analysis of matched pairs. Pilot unit NESs will provide the DNP student with an electronic mailing list of all active preceptors on each pilot unit. Each preceptor will be sent a unique link to complete the survey in REDCap via their organizational e-mail account. Pilot unit NESs will also receive a unique link to complete the survey in REDCap via their organizational e-mail account.

Consent to collect survey data is considered obtained when the participant (preceptor or NES) completes the survey. Instructions prior to starting the survey will include the statement addressing confidentiality and intent of the survey (Appendix Q).

The primary barrier to data collection using surveys is the response rate of participants. Due to the small number of NESs participating (n = 5) and the nature of their involvement in the project, the project leader is not concerned about receiving survey responses from each NES. However, there is concern about the response rate from preceptors. While the surveys are designed to be short to improve the likelihood of participants answering each question, there is a risk that not all participants will answer every question, especially on the post-survey where several open-ended questions are asked. Additionally, the number of preceptors who have used the LCJR within the three-month pilot will likely be substantially less than the total number of preceptors. Communication to the pilot unit preceptors via unit-based newsletters, e-mails, posters, and face-to-face contact prior to sending out the survey will inform preceptors about the upcoming survey and pilot project with the intent of improving their response rate (Appendix T). Both the pilot unit NESs and the DNP student will be involved in these communication efforts.

Pre-implementation surveys will be sent out to participants preferably prior to conducting preceptor education and at least two weeks prior to implementing the LCJR. Reminder e-mails will be sent at one week, two weeks, and 18 days from the initial e-mail. The MICU is expected to begin educating their preceptors mid-January 2020 with the remaining pilot units educating their preceptors in February and early March 2020. Thus, the survey will be administered to the MICU preceptors and NES in January, followed by sending out the surveys to the general medical and outpatient radiology units at the beginning of February 2020. It is not necessary for participants to complete the survey prior to being educated on the LCJR, though it will be

available to them prior to the education occurring. Survey responses will be collected prior to implementing the LCJR, however. See Appendix U, Figure U1, for a timeline using estimated start dates for data collection and piloting the LCJR on each unit.

The start of the pilot for each unit is the first day an orientee is scheduled on the unit with a preceptor after preceptors have been educated on the LCJR. NESs will inform the DNP student of the official start date of the pilot for each unit. Twelve weeks after the unit has implemented the LCJR, the preceptor and NES post-implementation survey will be administered using the same techniques as the pre-implementation survey. Units are expected to reach the end of their pilot between the end of April 2020 and the end of May 2020. Data collection for the post-implementation surveys will occur from the end of April 2020 until the end of June 2020. Surveys will remain open for two weeks. Once all unit survey windows have closed, the DNP student will look at the responses received from the open-ended questions to determine if interviews with preceptors need to be conducted. If the need for interviews is identified, an addendum to the study will be submitted to the WSU IRB, and once approved, the DNP student will schedule and conduct interviews.

Data analysis plan.

The project design uses a mixed methods approach to measuring outcomes to provide data triangulation (Burns & Grove, 2009). Pre-pilot survey data is nominal, ordinal, interval, and ratio level data. While the Likert scale questions technically produce ordinal level data, they are treated as interval level data based on common research practices to allow for parametric analyses (Burns & Grove, 2009). Post-pilot surveys collect quantitative interval level data and qualitative data.

Quantitative data analysis.

Several questions provide the framework for the statistical tests needed to analyze the data. The primary question is, "Is there a difference between pre-survey responses and post-survey responses on those questions measuring shared language, value, and objectivity?" Differences will be deemed statistically significant at α equals 0.05. Additional questions the collected data will be used to answer include determining if demographic variables affect the amount of change between pre-survey responses and post-survey responses on those questions measuring shared language, value, and objectivity. Because age is being collected at the ratio level of data, it will be analyzed in a few different ways, including by decade (twenties, thirties, etc.) and by generations as defined by the Pew Research Center (Dimock, 2019). The NES survey is only collecting demographic data related to the number of years of experience as a NES, number of years of experience supporting their current unit, and what type of care area they support, so statistical analyses will be more limited with this survey than the preceptor surveys.

The paired *t* test will be used to determine if there is a difference between pre-survey responses and post-survey responses on those questions measuring shared language, value, and objectivity (see Appendix V tables for survey questions and corresponding outcomes). The paired *t* test is appropriate because the pilot study is a two-group design and uses matched pairs (Burns & Grove, 2009). To determine if there are relationships between demographic variables and responses to questions measuring shared language, value, and objectivity, Spearman's Rank Order Correlation Coefficient will be used for all demographic data except age, where Pearson's Product Moment Correlation Coefficient may be used because of the level of data (Burns &

Grove, 2009). Confidence intervals and *p* values will be calculated as well to help determine significance of tests.

Descriptive statistics will be used to describe the sample using the demographic data collected. These statistics include proportions, means, modes, ranges, and standard deviations (Burns & Grove, 2009).

Qualitative data analysis.

The pilot project is a mixed methods explanatory pretest-posttest design, where the quantitative data is collected first and the qualitative data is collected last to help explain and build on the quantitative data collected (Polit & Beck, 2018). On the post-pilot preceptor and NES surveys, five open-ended question statements are asked to elicit written responses regarding the use of the LCJR and the three themes (shared language, value, and objectivity). This approach was determined due to the pilot nature of this project, time and training constraints of the DNP student, and the ability to easily collect rich text from a larger pool of participants than would have been included if focus groups or interviews were conducted. As stated earlier, if sufficient qualitative data are not obtained from the post-pilot surveys, the DNP student will revert to conducting focus groups or individual interviews to collect the desired qualitative data.

The DNP student will conduct a content analysis on qualitative responses from the surveys. The content analysis will involve analyzing the narrative content for themes and patterns and grouping material based on shared concepts (Polit & Beck, 2018). Relationships between themes and participants will be analyzed as well (e.g., certain themes more prominent among participants of a particular age group) (Polit & Beck, 2018). Content analysis will be performed manually by the DNP student. To improve validity, the DNP mentor and advisor will analyze the narrative responses against the themes identified by the DNP student.

Preparation of data for analysis.

Data from all surveys will be collected by the secure REDCap platform tools hosted at the organization. REDCap allows automated export to common statistical packages (Harris et al., 2009; Harris et al., 2019), including Excel, eliminating concerns of data entry mistakes. The DNP student will work with the administrative assistant for REDCap surveys to export survey data into Excel spreadsheets, including narrative responses. A statistician at the organization will perform all quantitative statistical analyses and the DNP student will work with them to export REDCap survey data into their preferred statistical package. The DNP student will mechanically copy and paste open-ended responses into a separate Excel spreadsheet to prevent transcription errors that could occur if manually copying responses during content analysis.

Resources, budget, and timeline.

Resources available.

Resources for the pilot project are readily available through the organization. Physical resources include the six pilot units representing three different care areas, meeting and classroom space, computers for preceptors to complete the online learning module, and printing services for promotional and paper resource materials. Personnel resources include the project mentor with expertise in the organization and with the LCJR, pilot unit NESs and preceptors, nurse administrator and unit-level managerial support, education technology specialist for building the online learning module, statistician, administrative support for building and managing surveys, survey research center consultant, and expert consultants to review surveys. Technology resources include software for building the online learning module and an online learning platform, REDCap survey software and secure platform, statistical software, and software to create promotional materials.

Resources needed.

At this time, no further resources have been identified as needed. The project mentor has been instrumental in securing resources for the project and will be consulted if something else is identified. The organization has plentiful resources readily available for personnel within the organization to complete projects approved by administration that do not get charged to the nursing department's accounts, making the utilization of multiple resources feasible and readily accessible (Project mentor, personal communication, September 20, 2019).

Budget.

The entire pilot project is operating within the nursing department's operational budget and not incurring any additional costs not typically covered by the normal budget. Personnel costs are the most expensive part of the project, as most units are allocating time off the unit for preceptors to receive in-person training on the LJCR. The pilot units have been creative with finding time off the unit for preceptors that works within their unit budgets. The MICU NES is using the unit's established preceptor committee time to train a select few preceptors, then working with additional preceptors one-on-one to provide training as shift work allows (MICU NES, personal communication, December 2, 2019). The general care NESs have secured time off the unit for their preceptors by finding a different method later in the year to complete unit staff competencies which normally are granted non-patient care hours (General Care NESs, personal communication, December 2, 2019). The Radiology NES was able to secure time during a scheduled competency day to train preceptors (Radiology NES, personal communication, November 22, 2019).

A cost analysis table is provided in Appendix W and is based on cost estimates if the organization were not covering all costs. The only cost not covered by the organization is

parking fees incurred by the DNP student when completing clinical hours at the organization. Whenever possible, the DNP student uses free parking options, including park and ride lots. The DNP student estimates $350.00 to $500.00 may be paid in parking fees over the course of the project, based on parking in public ramps for eight hours at a time for 200 to 300 of the 540 estimated project hours at the organization when unable to use free parking options. The DNP student will personally pay parking fees. All other costs associated with the project are absorbed by the DON's operating budget, including statistical consults.

Timeline.

The timeline for implementation of the pilot project through the conclusion of the pilot is scheduled to take approximately six months, starting in January and ending in June. Once all data are collected from the post-surveys, data analysis will occur in July 2020, followed by disseminating findings to the pilot units, EPD division, and other organizational stakeholders, and writing of the manuscript for project dissemination and final examination meeting of the DNP project committee. The final examination meeting is anticipated to occur in late August to early September 2020. A Gantt chart of the anticipated timeline is included in Appendix U, Figure U2.

Summary of implementation plan.

In summary, the plan for implementation involves establishing the pilot project team, creating resources to educate pilot units on the change and why the LCJR will be piloted, collecting pre-implementation data, piloting the LCJR, then collecting post-implementation data for comparison. Advertising the upcoming pilot project to the pilot units is currently underway so preceptors receive communication early and often regarding the pilot project and the LCJR. Communication is occurring through infographics posted on the pilot units, via e-mails and unit-

based newsletters, and through coordinating council meetings for some units. Education on the tool will start in January for preceptors and is vital to preparing them to use the LCJR and create a successful change. Surveys will be sent to all pilot unit preceptors to collect data on their current progress review process and will be open for two weeks. Once each unit's preceptors have received the education via the online learning module and in-person training, the unit NESs will implement the LCJR as a new progress review tool with the next orientees hired onto the units. The pilot will run for three months on each unit, then post-pilot surveys will be sent out to collect data on the new progress review process implemented using the LCJR. The pilot periods are expected to finish by the end of May, allowing through the month of June for data collection. Data analysis will occur in July, with dissemination beginning in August. From start (advertising the pilot) to finish (final examination), the project is expected to last approximately 10 months.

Conclusion

In conducting the readiness to change assessment, the DNP student identified the problem, reviewed the evidence, determined an appropriate theoretical framework for the project, and developed a plan for application of the evidence to address the problem. The DON uses the tiered skills acquisition model (TSAM) to track orientee progress but identified a gap in their orientees' clinical judgment skills, leading them to seek an additional evidence-based tool to provide objective evaluation of clinical judgment. When interviewing NESs and preceptors across the department, the DNP student noted a lack of objectivity or clear standards for evaluating an orientee's clinical judgment. Many NESs also stated their preceptors often struggled to clearly communicate where an orientee needed improvement if it was not skills-based or addressed by the TSAM. Some NESs and preceptors interviewed expressed the current

progress review process did not bring value to the preceptor or orientee so preceptors did not want to put time into completing a tool that did not provide value to their precepting duties.

Upon review of the literature, the DNP student found Lasater's clinical judgment rubric (LCJR) to be a valid and reliable tool for evaluating concepts related to clinical judgment according to Tanner's clinical judgment model (Adamson et al., 2011; Miraglia & Asselin, 2015; Victor-Chmil & Larew, 2013). Use of the LCJR has demonstrated outcomes pertinent to this project, including providing a shared language for evaluation and feedback, improving objective evaluation of clinical judgment, and providing value to preceptors by improving their ability to teach and provide feedback to orientees (Hines & Wood, 2016; Lasater, 2007; Lasater et al., 2015; Lusk Monagle et al., 2018; Nielsen et al., 2016).

Tanner's (2006) CJM provides the theoretical basis for this project. The CJM notes that clinical judgment is affected by a nurse's background and experiences, current context, organizational and unit cultures, and knowledge of the patient. Clinical judgment encompasses the domains of noticing, interpreting, responding, and reflecting and is a non-linear process (Tanner, 2006). The LCJR expands upon those domains to include 11 dimensions which provide further definition of what is entailed in each domain (Lasater, 2011).

After careful consideration of the evidence and determining the department's needs, the DNP student worked with the project mentor to develop a plan to pilot the LCJR on six units which represent the three main care areas at the organization: inpatient intensive care, inpatient general care, and outpatient care. The NESs supporting each unit have been trained on the LCJR and are working with the DNP student and project mentor to inform and educate the pilot unit preceptors on the use of the LCJR as a progress review tool. Prior to implementing the LCJR, pre-pilot surveys will be sent to all pilot unit NESs and preceptors to measure their perceptions

of the current progress review form's ability to provide a shared language, objective evaluation of clinical judgment, and value to the process. Once surveys are collected and preceptors have been educated, the LCJR will be implemented on each unit for three months before preceptors and NESs are surveyed again to determine how the new process affected the outcomes of shared language, objectivity, and value. Data analysis is planned for Summer 2020, and dissemination will follow shortly thereafter.

The project team is hopeful the outcomes will support another pilot of the LCJR with new units, using lessons learned from the first pilot to ensure unit-level readiness to change and adequate education provided to make implementation successful. Implications for future practice include using the LCJR across the nursing department as a progress review tool and integrating Tanner's CJM and the LCJR into preceptor courses, workshops, and forums.

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Appendix A

Readiness to Change Survey Questions

CLINICAL JUDGMENT DEFINITION:

Clinical judgment is defined as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (Tanner, 2006, p. 204).

NURSE EDUCATION SPECIALISTS' SURVEY QUESTIONS:

1. I am confident in my ability to determine orientees' clinical judgment.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

2. I feel I have tools or other support to objectively measure my orientees' clinical judgment.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

3. I am confident in my preceptors' abilities to determine orientees' clinical judgment.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

4. My preceptors are able to accurately describe to me where or how an orientee is struggling in such a way that I know exactly what they mean.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

5. I occasionally have to extend orientation for orientees because they need further clinical judgment development.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

6. Orientees who are not meeting expectations (NME) do not have well-developed clinical judgment.
    a. *Strongly agree*
    b. *Agree*
    c. *Disagree*
    d. *Strongly disagree*

7. Since January 2017, I had ____ orientees not meeting expectations (NME). (If not in your current role since January 2017, please include data for your orientees since taking the role & note when you started here: _____).
    a. Please briefly describe the reasons for each orientee NME: _____

8. Do you currently use Lasater's Clinical Judgment Rubric (LCJR) or a modified LCJR to assess the clinical judgment of your orientees?
    a. If so, how do you use it (e.g., NES uses it to score orientee, preceptor completes form prior to progress reviews or at set times during orientation)? _____

PRECEPTOR SURVEY QUESTION

- I am confident in my ability to evaluate the orientee's level of noticing, interpreting, responding, and reflecting during their orientation.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

ORIENTEE SURVEY QUESTION

- I am confident in my ability to notice, interpret, respond, and reflect regarding clinical situations after completing orientation.
    - *Strongly agree*
    - *Agree*
    - *Disagree*
    - *Strongly disagree*

Appendix B

Literature Search Tables

Table B1.

Initial Literature Search and Data Abstraction

Search	Date Searched	Database/ Other	Key Words	Limiters	# of Hits	
					Listed	Reviewed
1	10/19/18	CINAHL	"registered nurse orientee" OR "RN orientee" AND "progress review" OR "evaluation"	English language, 2008-2018	4	2
2	10/19/18	CINAHL	"graduate nurse" AND "evaluation" AND "orientation"	English language, 2008-2018	120	9
3	11/2/18	CINAHL	"clinical judgment" AND "critical thinking"	English language, 2004-2018	174	5
4	11/2/18	CINAHL	"clinical judgment" AND "framework" AND "nursing"	English language, 2008-2018	106	1
5	11/2/18	CINAHL	"Lasater clinical judgment"	English language, 2008-2018	61	9
6	11/2/18	M. Coy's Literature Review Table	N/A	N/A	16	9
7	11/3/18	CINAHL	"nursing orientation" AND "evaluation"	English language, 2008-2018	68	13
8	11/4/18	CINAHL	"orientation programs" AND "progress" AND "nurse"	English language, 2008-2018	14	4
9	11/4/18	CINAHL	"orientation programs" AND "evaluation" AND "nurse"	English language, 2008-2018	270	22

Table B2.

Updated Literature Search and Data Abstraction

Search	Date Searched	Database/ Other	Key Words	Limiters	# of Hits	
					Listed	Reviewed
1	10/10/2019	CINAHL, Ovid, ProQuest	(Lasater clinical judgment rubric)	English language, published since Nov. 2018	14	2
2	10/10/2019	CINAHL, Ovid, ProQuest	("employee orientation" or "nursing orientation") AND nurs* AND progress*	English language, published since Nov. 2018	30	2
3	10/10/2019	CINAHL, Ovid, ProQuest	"nurs* orientation" AND "evaluat* progress"	English language, published since Nov. 2018	1	0
4	10/10/2019	CINAHL, Ovid, ProQuest	"nurs* orientation" AND (evaluat* OR assess*)	English language, published since Nov. 2018	54	4
5	10/10/2019	CINAHL, Ovid, ProQuest	(clinical judg*) AND nurs*	English language, published since Nov. 2018	546	7
6	10/13/2019	ProQuest	("clinical judg*") AND nurs* NOT student*	English language, peer reviewed, published since Nov. 2018	261	1
7	10/13/2019	CINAHL, Ovid	Preceptor AND educat* AND nurs*	English language, published since 2014	437	49
8	10/13/2019	ProQuest	ft(preceptor) AND ft(educat*) AND ft(nurs*) NOT ft(student*) NOT APRN	English language, peer reviewed, published since 2014	164	2
9	10/13/2019	CINAHL, Ovid	(educating preceptor*) AND nurs*	English language, published since 2009	19	1

Table B2. (continued)

Updated Literature Search and Data Abstraction

Search	Date Searched	Database/ Other	Key Words	Limiters	# of Hits	
					Listed	Reviewed
10	10/13/2019	ProQuest	"educat* preceptor*" AND nurs*	English language, peer reviewed, published since 2009	89	4
11	10/13/2019	CINAHL, Ovid	Search for articles based on mining from other articles	English language	1	1

Appendix C

Decision Trees for Literature Inclusion in Review

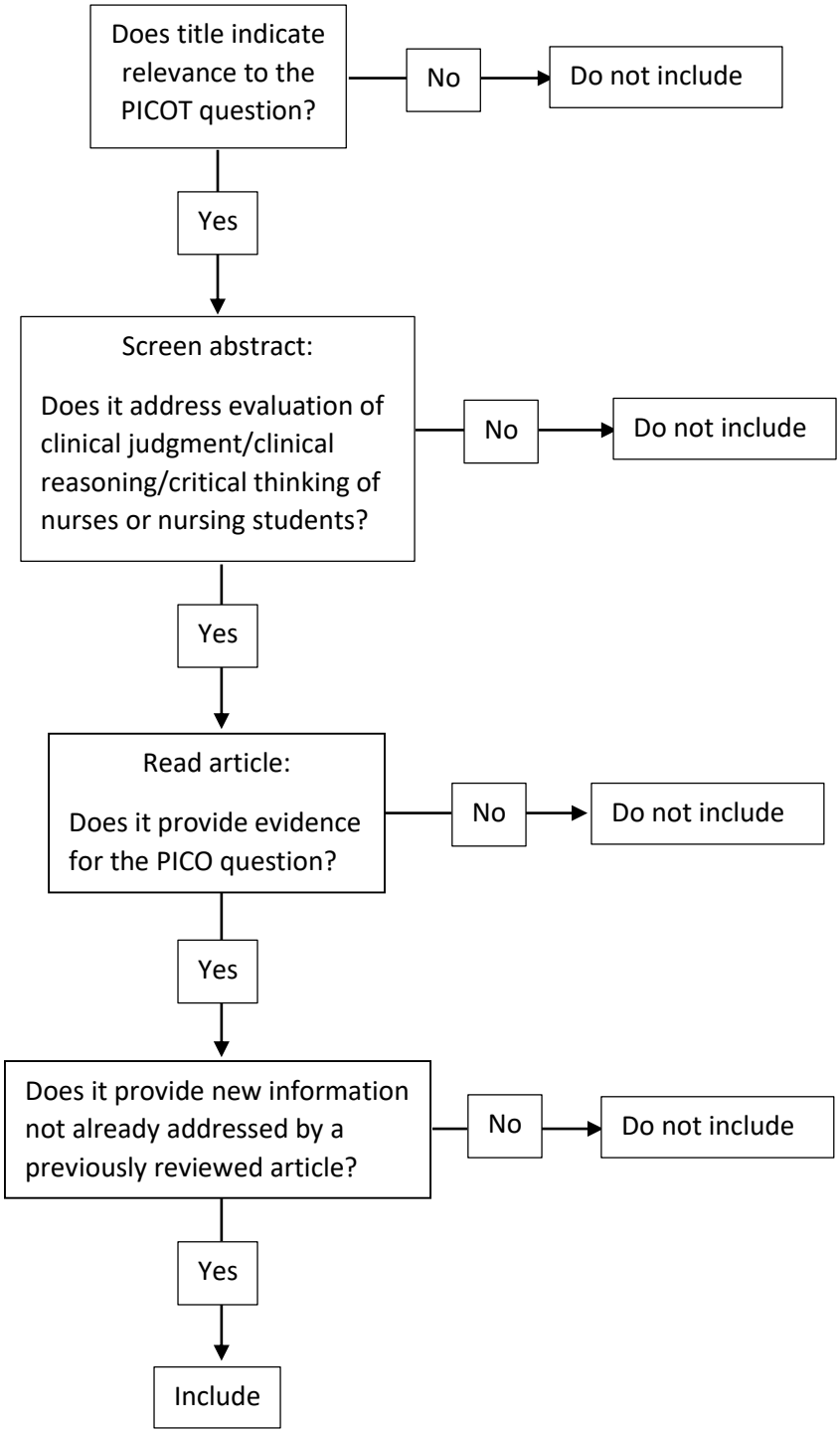


Figure C1. Decision tree for original literature search and review.

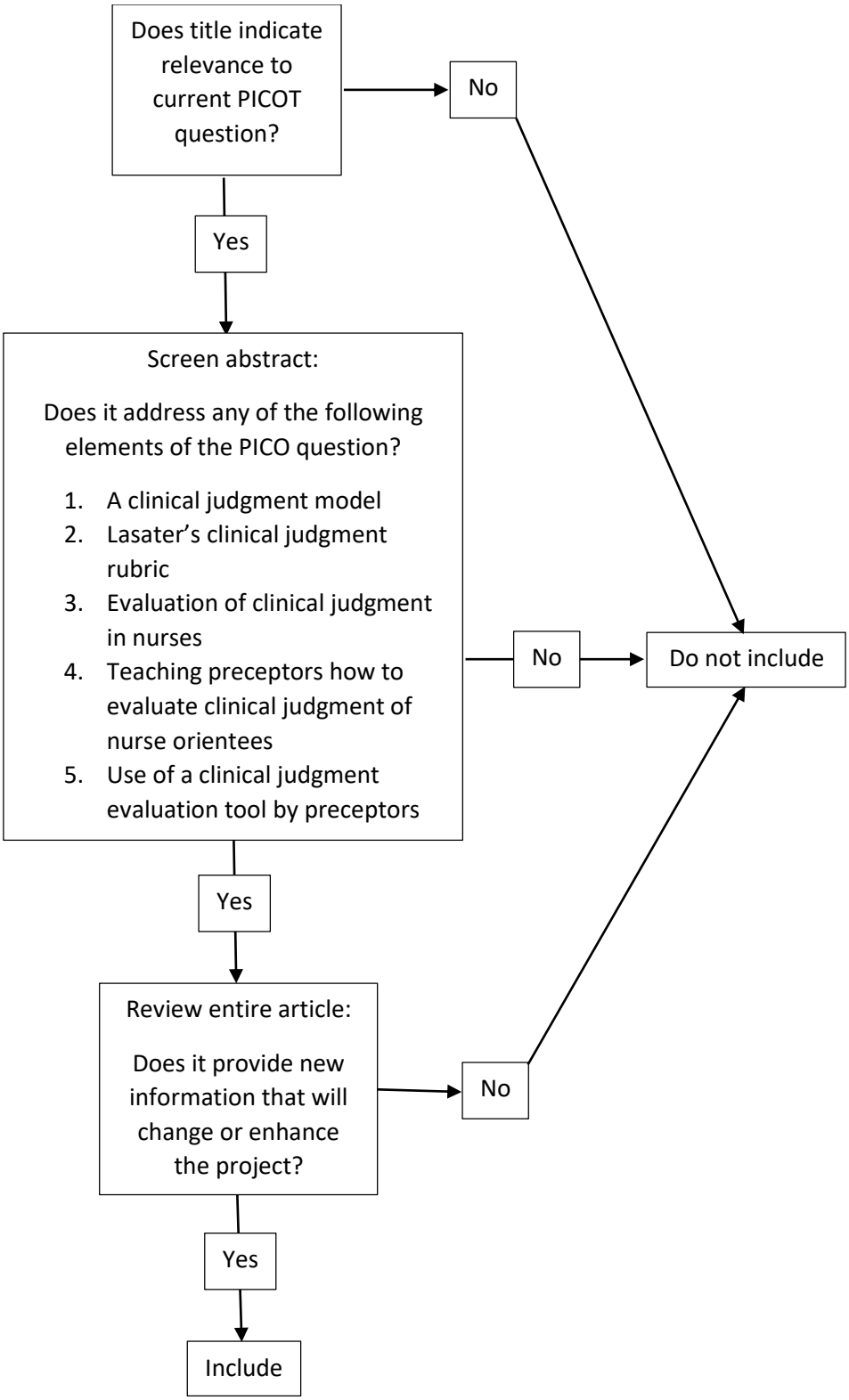


Figure C2. Decision tree for updated literature search and review.

Appendix D

JHNEBP Evidence Level and Quality Guide

Evidence Levels	Quality Ratings
Level I Experimental study, randomized controlled trial (RCT) Explanatory mixed method design that includes only a level I quaNtitative study Systematic review of RCTs, with or without meta-analysis	**QuaNtitative Studies** **A High quality**: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence. **B Good quality**: Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. **C Low quality or major flaws**: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.
Level II Quasi-experimental study Explanatory mixed method design that includes only a level II quaNtitative study Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis	**QuaLitative Studies** No commonly agreed-on principles exist for judging the quality of quaLitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria. *For meta-synthesis, there is preliminary agreement that quality assessments of individual studies should be made before synthesis to screen out poor-quality studies[1].* **A/B High/Good quality** is used for single studies and meta-syntheses[2]. The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report: • Transparency: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. • Diligence: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. • Verification: The process of checking, confirming, and ensuring methodologic coherence. • Self-reflection and scrutiny: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. • Participant-driven inquiry: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. • Insightful interpretation: Data and knowledge are linked in meaningful ways to relevant literature. **C Low quality** studies contribute little to the overall review of findings and have few, if any, of the features listed for high/good quality.
Level III Nonexperimental study Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis Exploratory, convergent, or multiphasic mixed methods studies Explanatory mixed method design that includes only a level III quaNtitative study QuaLitative study Meta-synthesis	

Evidence Levels	Quality Ratings
Level IV Opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence Includes: • Clinical practice guidelines • Consensus panels/position statements	**A <u>High quality:</u>** Material officially sponsored by a professional, public, or private organization or a government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise clearly evident; developed or revised within the past five years **B <u>Good quality:</u>** Material officially sponsored by a professional, public, or private organization or a government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise clearly evident; developed or revised within the past five years **C <u>Low quality or major flaws:</u>** Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the past five years
Level V Based on experiential and nonresearch evidence Includes: • Integrative reviews • Literature reviews • Quality improvement, program, or financial evaluation • Case reports • Opinion of nationally recognized expert(s) based on experiential evidence	**Organizational Experience (quality improvement, program or financial evaluation)** **A <u>High quality</u>**: Clear aims and objectives; consistent results across multiple settings; formal quality improvement, financial, or program evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence **B <u>Good quality</u>**: Clear aims and objectives; consistent results in a single setting; formal quality improvement, financial, or program evaluation methods used; reasonably consistent recommendations with some reference to scientific evidence **C <u>Low quality or major flaws</u>**: Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement, financial, or program evaluation methods; recommendations cannot be made **Integrative Review, Literature Review, Expert Opinion, Case Report, Community Standard, Clinician Experience, Consumer Preference** **A <u>High quality</u>**: Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader(s) in the field **B <u>Good quality</u>**: Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions **C <u>Low quality or major flaws</u>**: Expertise is not discernable or is dubious; conclusions cannot be drawn

1 https://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/6_4_ASSESSMENT_OF_QUALITATIVE_RESEARCH.htm
2 Adapted from Polit & Beck (2017).

Appendix E

Evidence Appraisals

Evidence level and quality rating: V/A			
Article title: Assessing the reliability, validity, and use of the Lasater clinical judgment rubric: Three approaches	Number: 1		
Author(s): Adamson, K. A., Gubrud, P., Sideras, S., & Lasater, K.	Publication date: 2011		
Journal: Journal of Nursing Education			
Setting: Academic testing of the LCJR in simulated scenarios	Sample (composition and size): nurse educators/faculty; numbers vary per study reviewed		
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*			
☒Literature review LEVEL V Summary of selected published literature including scientific and nonscientific such as reports of organizational experience and opinions of experts			
Is subject matter to be reviewed clearly stated?	☒Yes	☐No	
Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No	
Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No	
Are gaps in the literature identified?	☒Yes	☐No	
Are recommendations made for future practice or study?	☒Yes	☐No	
Findings That Help Answer the EBP Question: • Adamson study provided 1-hour telephone or videoconference training on use of LCJR, including a sample scenario and demonstration of correct scoring. • Adamson study reliability: intraclass correlation coefficient (ICC) = 0.889. Validity: intended levels of clinical judgment within each scenario scored consistently and appropriately across all raters (n = 29 nurse educators) • Gubrud-Howe study used a 7-hour live training with 5 prerecorded scenarios on use of LCJR. • Gubrud-Howe study reliability: Interrater reliability from training established ($\alpha = 0.87$) (n = 2 nurse faculty); 96% agreement between raters when pretest/posttest scores combined for students evaluated. • Sideras study provided a 6-hour seminar that covered Tanner's model of clinical judgment, and training on sources of rater error and opportunity to practice with goal to have > 90% agreement by end of seminar. Agreement level not met, so follow-up modules developed and raters (n = 4 faculty) completed on their own until agreement level met. • Sideras study reliability: 57% to 100% agreement, indicating a wide variability; validity			

indicated by raters accurately identifying the student's level (e.g., junior or senior).
Complete the corresponding quality rating section.

Evidence level and quality rating: III/A		
Article title: Systematic review of clinical judgment and reasoning in nursing		Number:2
Author(s): Cappelletti, A., Engel, J. K., Prentice, D.		Publication date: 2014
Journal: Journal of Nursing Education		
Setting: N/A	Sample (composition and size): 15 research studies (9 qualitative, 5 quantitative, 1 mixed methods) published since Tanner's (2006) review on clinical judgment and reasoning in nursing	
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*		
Study Findings That Help Answer the EBP Question Body of evidence continues to mostly support Tanner's CJM and the 5 conclusions: 1) CJ more influenced by what nurse brings to the situation than by objective data available at hand (conflicting evidence based on experience level), 2) Sound CJ depends to some extent on knowing the patient and their typical responses and engaging with patient (confirmed), 3) CJ influenced by context and culture in which the situation occurs (includes broader culture, e.g., country of practice), 4) nurses use a variety of reasoning patterns (analytic processes, intuition, & narrative thinking) (confirmed; reasoning pattern(s) used may not lead to sound CJ), and 5) reflection on practice typically triggered by a breakdown in CJ and is required to develop and improve CJ (confirmed, but only addressed by 1 study). Literature supports adding a sixth conclusion: Education strategies to improve CJ may influence what the nurse brings to a situation. No one educational strategy was identified as "best practice" for developing CJ. This conclusion takes "understanding CJ" to "responding" by finding ways to teach & develop CJ.		
Section I: QuaNtitative (continued)		
B Is this a summary of multiple sources of research evidence?	☒Yes *Continue*	☐No **Use Appendix F**
1. Does it employ a comprehensive search strategy and rigorous appraisal method? *If this study includes research, nonresearch, and experiential evidence, it is an integrative review (see Appendix F).*	☒Yes *Continue*	☐No **Use Appendix F**
2. For systematic reviews and systematic reviews with meta-analysis (see descriptions below):		
a. Are all studies included RCTs?		**LEVEL I**

b. Are the studies a combination of RCTs and quasi-experimental, or quasi-experimental only?	**LEVEL II**
c. Are the studies a combination of RCTs, quasi-experimental, and nonexperimental, or non-experimental only?	**LEVEL III**

A **systematic review** employs a search strategy and a rigorous appraisal method, but does not generate an effect size.
A **meta-analysis**, or systematic review with meta-analysis, combines and analyzes results from studies to generate a new statistic: the effect size.

Skip to the **Appraisal of Systematic Review** (With or Without a Meta-Analysis) section

Appraisal of Systematic Review (With or Without Meta-Analysis)		
Were the variables of interest clearly identified?	☒Yes	☐No
Was the search comprehensive and reproducible? • Key search terms stated	☒Yes	☐No
• Multiple databases searched and identified	☒Yes	☐No
• Inclusion and exclusion criteria stated	☒Yes	☐No
Was there a flow diagram that included the number of studies eliminated at each level of review?	☒Yes	☐No
Were details of included studies presented (design, sample, methods, results, outcomes, strengths, and limitations)?	☒Yes	☐No
Were methods for appraising the strength of evidence (level and quality) described?	☒Yes	☐No
Were conclusions based on results?	☒Yes	☐No
• Results were interpreted	☒Yes	☐No
• Conclusions flowed logically from the interpretation and systematic review question	☒Yes	☐No
Did the systematic review include a section addressing limitations **and** how they were addressed?	☐Yes	☒No

Complete the **Quality Rating for QuaNtitative Studies** section

Section II: QuaLitative

Level of Evidence (Study Design)		
B For summaries of multiple quaLitative research studies (meta-synthesis), was a comprehensive search strategy and rigorous appraisal method used?	☒Yes **Level III**	☐No go to **Appendix F**

Complete the **Appraisal of Meta-Synthesis Studies** section (below)

Appraisal of Meta-Synthesis Studies		
Were the search strategy and criteria for selecting primary studies clearly defined?	☒Yes	☐No
Were findings appropriate and convincing?	☒Yes	☐No
Was a description of methods used to: • Compare findings from each study?	☒Yes	☐No

• Interpret data?	☒Yes	☐No
Did synthesis reflect:		
• New insights?	☒Yes	☐No
• Discovery of essential features of phenomena?	☒Yes	☐No
• A fuller understanding of the phenomena?	☒Yes	☐No
Was sufficient data presented to support the interpretations?	☒Yes	☐No
Complete the **Quality Rating for QuaLititative Studies** section		

Evidence level and quality rating: III/A	
Article title: Understanding the needs of nurse preceptors in acute hospital care setting: A mixed-method study	Number: 3
Author(s): Chan, H. YL., So, W. KW., Aboo, G., Sham, A. SY., Fung, G. SC., Law, W. SL., Wong, H. LH., Chau, C. LT., Tsang, L. F., Wong, C., & Chair, S. Y.	Publication date: 2019
Journal: Nurse Education in Practice	
Setting: 3 acute public hospitals in Hong Kong	Sample (composition and size): Nurse preceptors (N = 260 who completed survey, n = 10 who completed focus group interviews)
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**Mixed methods (**results reported both numerically and narratively) Both quaNtitative and quaLitative methods are used in the study design. Using both approaches, in combination, provides a better understanding of research problems than using either approach alone. Sample sizes vary based on methods used. Data collection involves collecting and analyzing both quaNtitative and quaLitative data in a single study or series of studies. Interpretation is continual and can influence stages in the research process. ➡ Go to ***Section III: Mixed Methods***	

Section III: Mixed Methods

Level of Evidence (Study Design)

You will need to appraise both the quaNtitative and quaLitative parts of the study independently, before appraising the study in its entirety.

1. Evaluate the quaNitative part of the study using **Section I**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	III	A
2. Evaluate the quaLitative part of the study using **Section II**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	III	A

3. To determine the level of evidence, circle the appropriate study design:

- **Explanatory** sequential designs collect quaNtitative data first, followed by the quaLitative data; and their purpose is to explain quaNtitative results using quaLitative findings. The level is determined based on the level of the quaNtitative part.

Study Findings That Help Answer the EBP Question

- On Clinical Teaching Behavior Inventory (CTBI), overall mean score 82.9 (out of 115, SD = 10.5). "Using appropriate teaching strategies" domain ranked highest (mean = 3.65, SD = 0.56), and "Providing feedback and evaluation" domain the lowest (mean = 3.51, SD = 0.60). Within "Providing feedback & evaluation" domain, the item "I use the evaluation form to objectively evaluate the performance of new nurses" mean score 3.30 (SD = 3.3; 16.5% strongly disagree/disagree, 40% neutral, 43.5% strongly agree/agree).
- Top five topics identified as most important to preceptor training were "How to teach: Critical thinking" (30.4%), "How to teach: Prioritizing" (27.3%), "Teaching techniques" (26.2%), "Conflict management" (23.8%), and "Teamwork" (22.7%). Least important topics were "Sequencing of assignments/progression of orientee" (3.8%), "Classes available for preceptors" (3.8%), "Paperwork" (4.2%), "How to access clinical resources" (4.2%), and "Expectations of the preceptor" (5.0%).
- Qualitative interviews echoed survey results and found 2 main themes related to the precepting experience: Challenges in the nurse preceptor role, with subcategories of *tension between clinical duty and providing guidance*, & *strained relationship with co-workers,* and expectations towards support for nurse preceptors with subcategories of *recognition from management level, additional focus on coaching tactics*, & *opportunities for reciprocal learning and collegiate support.* Regarding opportunities for learning, some expressed learning through scenarios or experience sharing most important to understanding how to effectively precept.

Complete the **Appraisal of Mixed Methods Studies** section

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☐Yes	☒No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*		**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*		**LEVEL III**
Skip to the **Appraisal of QuaNtitative Research Studies** section		

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A

If surveys or questionnaires were used, was the response rate ≥ 25%?	☒Yes	☐No	☐N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			
Section II: QuaLitative			
Level of Evidence (Study Design)			
A Is this a report of a single research study?	☒Yes **this is Level III**	☐No **go to II B**	
Complete the **Appraisal of Single QuaLitative Research Study** section (below)			
Appraisal of a Single QuaLitative Research Study			
Was there a clearly identifiable and articulated: • Purpose?	☒Yes	☐No	
• Research question?	☒Yes	☐No	
• Justification for method(s) used?	☒Yes	☐No	
• Phenomenon that is the focus of the research?	☒Yes	☐No	
Were study sample participants representative?	☐Yes	☒No	
Did they have knowledge of or experience with the research area?	☒Yes	☐No	
Were participant characteristics described?	☒Yes	☐No	
Was sampling adequate, as evidenced by achieving saturation of data?	☒Yes	☐No	
Data analysis: • Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis and interpretation?	☒Yes	☐No	
• Was there a description of how data were analyzed (i.e., method), by computer or manually?	☒Yes	☐No	
Do findings support the narrative data (quotes)?	☒Yes	☐No	
Do findings flow from research question to data collected to analysis undertaken?	☒Yes	☐No	
Are conclusions clearly explained?	☒Yes	☐No	
Skip to the **Quality Rating for QuaLitative Studies** section			
Appraisal of Mixed Methods Studies[3]			
Was the mixed-methods research design relevant to address the quaNtitative and quaLitative research questions (or objectives)?	☐Yes	☐No	☐N/A

Was the research design relevant to address the quaNtitative and quaLitative aspects of the mixed-methods question (or objective)?	☐Yes	☐No	☐N/A
For convergent parallel designs, was the integration of quaNtitative and quaLitative data (or results) relevant to address the research question or objective?	☐Yes	☐No	☐N/A
For convergent parallel designs, were the limitations associated with the integration (for example, the divergence of quaLitative and quaNtitative data or results) sufficiently addressed?	☐Yes	☐No	☐N/A
Complete the **Quality Rating for Mixed-Method Studies** section			

Evidence level and quality rating: III/A	
Article title: Exploring discrepancies in perceived nursing competence between postgraduate-year nurses and their preceptors	Number: 4
Author(s): Chen, S.-H., Chien, L.-Y., Kuo, M.-L., Li, Y.-H., Chiang, M.-C., & Liu, Y-C.	Publication date: 2017
Journal: The Journal of Continuing Education in Nursing	
Setting: an academic medical center in Taiwan	Sample (composition and size): *N* = 105 post-graduate year nurse-preceptor pairs with *n* = 99 responding (94.2% response rate)
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis. ➡ Go to ***Section I: QuaNtitative***	

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☐Yes	☒No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*		**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*		**LEVEL III**
Study Findings That Help Answer the EBP Question Overall assessment of competence scores not significantly different between preceptors (mean = 12.3, SD = 2.5) and preceptees (mean = 12.8, SD = 2.1) (p = .075). No significant difference in subscales of clinical care, research awareness, or professional growth. Significant difference in scores (p < .05) between preceptees and preceptors in communication (mean = 14.0, SD = 2.6 versus mean = 13.3, SD = 2.7, respectively), patient education (mean = 12.6, SD = 2.5 versus mean = 11.9, SD = 3.0, respectively), and management (mean = 12.7, SD = 2.5 versus mean = 11.9, SD = 3.2, respectively). Preceptors with more months of clinical experience experienced greater discrepancies between their preceptee's competence ratings in clinical care (β = .28, p < .05), communication (β = .28, p < .05), patient education (β = .35, p < .01), research awareness (β = .39, p < .01), and overall competence (β = .35, p < .01).		
Skip to the **Appraisal of QuaNtitative Research Studies** section		

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	

If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☒Yes	☐No	☐N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Evidence level and quality rating: V/A			
Article title: Implementation of a preceptor training program	Number: 5		
Author(s): Condrey, T.	Publication date: 2015		
Journal: The Journal of Continuing Education in Nursing			
Setting: large regional medical center in Georgia	Sample (composition and size): Preceptors assigned to new graduate RNs in 2013		
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*			
Organizational Experience ☒Program evaluation LEVEL V Systematic assessment of the processes and/or outcomes of a program; can involve both quaNtitative and quaLitative methods			
Was the aim of the project clearly stated?	☒Yes	☐No	
Was the method fully described?	☒Yes	☐No	
Were process or outcome measures identified?	☒Yes	☐No	
Were results fully described?	☒Yes	☐No	

Was interpretation clear and appropriate?	☒Yes	☐No	
Are components of cost/benefit or cost effectiveness analysis described?	☒Yes	☐No	☐N/A

Findings That Help Answer the EBP Question:

- Developed a preceptor training program, incentives to participate, and measurement tools. Preceptor training program included online instruction, divided into 3 modules to prevent overwhelming learners, and a 4-hour in-person class. Contact hours were awarded to preceptors completing the online modules as well as the in-person class. Recruitment of preceptors done by unit managers, distributed flyers, and unit-to-unit visits to answer questions (did not clarify who did the visits).
- Part 1 pretest mean scores 60% and posttest mean scores 95%. Contact hour evaluation for Part 1 indicated preceptors evaluated the online modules positively, with all responses except one neutral response being strongly agree/agree. 86% strongly agreed program was satisfactory overall.
- Part 2 class contact hour evaluations overall positive, with only 3 preceptors stating disagree/strongly disagree that the length of the program was adequate, and only one disagreeing that the program was offered at a convenient time. 81% strongly agreed program was satisfactory overall.
- Preceptor survey results (n = 14): mean scores (out of 6) for perception of preceptor benefits and rewards was 5.27 (SD = 0.65), perception of preceptor support was 4.19 (SD = 0.74), and commitment to preceptor role was 4.75 (SD = 1.15). Perception of rewards and benefits strongly correlated to support (r = 0.638, p = 0.014) and role commitment (r = 0.862, $p \leq 0.001$). Perception of support strongly correlated to role commitment (r = 0.668, p = 0.009).
- Cost-benefit ratio calculated using supplies (office supplies, decorations, preceptor gifts), food (snacks for class), and human resources (staff educator support, nurse educator salary for development & implementation of training, & preceptor salary) costs (total $11,588.02) and compared to retention costs of a new graduate RN (NGRN) ($96,595) and determined a cost savings of $85,006.98 for just one NGRN retention.

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: A 'toolkit' for clinical educators to foster learners' clinical reasoning and skills acquisition	Number: 6
Author(s): Cook, C.	Publication date: 2016
Journal: Nursing Praxis in New Zealand	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question?

☒Yes

☐No- *Do not proceed with appraisal of this evidence*

☒**Expert opinion LEVEL V** Opinion of one or more individuals based on clinical expertise		
• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☒Yes	☐No

Findings That Help Answer the EBP Question

- Important to provide a framework and general rules to preceptors to help them educate and evaluate preceptees. Use of the constructivist learning theory and "zone of proximal development" (ZPD) helps learners make sense of what they are learning by framing it within past experiences and building upon those. Assessment of the ZPD requires the educator to gradually withdraw support and not micromanage the preceptee in order to promote growth.
- The Model of Practical Skill Performance (MPSP) provides a framework for educators and learners to use in clinical learning. It was reported in one study as providing transparency to the invisible or intuitive aspects of skills and caring allowing educators to address these purposefully and the learners to learn and integrate these aspects in a timely manner.
- The 4A model uses 4 steps: anchoring the learner in current knowledge, adding additional knowledge, applying the skill, and reflecting on the takeaways for the learner to facilitate generalization of learning. Anchoring includes pre-reflection in order to assess the learner's current knowledge and skill level for the educator to build upon. The final step is often overlooked but vital to learners being able to apply things learned to other situations that may not be exactly the same.
- The Five Minute Preceptor (5MP) is a 5-step model based on experiential learning (Kolb's theory). 1) Get learner to take a stand (learner states where their knowledge level is at), 2) probe for evidence (anchoring, getting learner to think more), 3) educator shares general rules (maximum of 3), 4) reinforce the positives (give specific feedback on what learner did well), & 5) correct errors and misinterpretations (give specific feedback on where they need to improve and how to do that).
- Think aloud (TA), questioning, and giving feedback important skills for educators to develop clinical reasoning in learners. TA includes both the learner and educator talking through their actions and reasoning and should occur both concurrently (reflection in action) & retrospectively (reflection on action).
- Questioning appears to take longer than giving information, but allows for development of critical thinking leading to time savings in the longterm. It is important to use questions that allow for highlighting the learner's current knowledge as well as areas for growth to prevent embarrassment and shame in the learner. Allow adequate time for learners to think and formulate a response. Structure questions to cover 6 areas: clarifying questions, analytical questions, inspire reflection, support breathrough thinking, challenge assumptions, and encourage ownership of solutions. Use of "what if" questions helps elicit further depth and flexibility of thinking and ability to apply the current situation to future scenarios.
- Well-planned and implemented feedback allows learners to self-assess their own

abilities, challenges, uncertainties and identify areas for improvement. Educators prime learners to expect motivational and developmental feedback as well as ask the learner for feedback on their role as preceptor. Priming can be useful to highlight areas the learner needs to work on and let them know the educator will be providing feedback on those specific areas after a patient interaction. Keep feedback limited to specific behavioral observations, rather than making assumptions about underlying motivations.
Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: Integrating the National Council of State Boards of Nursing clinical judgment model into nursing educational frameworks	Number: 7
Author(s): Dickison, P., Haerling, K. A., & Lasater, K.	Publication date: 2019
Journal: Journal of Nursing Education	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question?

☒Yes

☐No- *Do not proceed with appraisal of this evidence*

☒Expert opinion LEVEL V

Opinion of one or more individuals based on clinical expertise

• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☒Yes	☐No

Findings That Help Answer the EBP Question

- NCSBN-CJM developed from synthesis of literature on the cognitive theories of the construct of clinical judgment: Intuitive-Humanistic model, Dual Process Reasoning Theory, and Information Processing Model.
- Layer 0 (observation) containes 2 entities: client needs and clinical decisions. Layers 1-3 are cognitive operations. Layer 1 is clinical judgment. Layer 2 is an iteritive process of forming, refining, and evaluating hypotheses. Layer 3 includes the operations needed for completion of each Layer 2 operation: recognize cues, analyze cues, prioritize hypotheses, generate solutions, take actions, & evaluate outcomes. Layer 4 is the environmental and individual contextual factors that influence the other layers.
- NCSBN-CJM can be used as an action model to create assessments based on scenarios (either full case studies or targeted scenarios), such as by using the operations in Layer 3 and delineating what actions are expected based on the cues and context given for each operation.

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: A collaborative project to apply and evaluate the clinical judgment model through simulation	Number: 8
Author(s): Dillard, N., Sideras, S., Ryan, M., Hodson Carlton, K., Lasater, K., & Siktberg, L.	Publication date: 2009
Journal: Nursing Education Perspectives	
Setting: Junior level adult health course in two schools of nursing	Sample (composition and size): *N* = 16 faculty across two schools of nursing *N* = 68 nursing students enrolled in a junior level adult health course
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	

Organizational Experience

☒Program evaluation LEVEL V

Systematic assessment of the processes and/or outcomes of a program; can involve both quaNtitative and quaLitative methods

Was the aim of the project clearly stated?	☒Yes	☐No	
Was the method fully described?	☒Yes	☐No	
Were process or outcome measures identified?	☒Yes	☐No	
Were results fully described?	☒Yes	☐No	
Was interpretation clear and appropriate?	☒Yes	☐No	
Are components of cost/benefit or cost effectiveness analysis described?	☐Yes	☐No	☒N/A

Findings That Help Answer the EBP Question:

- Faculty eval of workshop (1-5 Likert scale, 5 = strongly agree/expert): Organizational environment (*m* = 4.3), motivation of faculty (*m* = 4.7), educational program & change (*m* = 3.9), educational program (*m* = 4.3), instructor performance (*m* = 4.5).
- Student eval of learning objectives (Likert scale 1-4, 4 = totally got it): Recognize how body position affects breathing in HF patients (*m* = 3.81), value of fluid assessment in interpreting pt status in HF (*m* = 3.63), respond to pt anxiety and recognize impact on HTN & resp. distress (*m* = 3.72), describe importance of adherence to med tx plan in HF pts (*m* = 3.51), know how lab values can be used when caring for HF pts (*m* = 3.12), respond w/ appropriate communication level to teach pts complex info (*m* = 3.51).
- Reflective journaling by students allows faculty to see how the student is thinking and can be effective for evaluating clinical judgment.
- Providing effective, well-organized training on the LCJR enables more effective use of the tool, likelihood of the faculty to use the tool and value what it provides.
- Recommend putting clinical judgment framework language into each course evaluation & syllabus

Complete the corresponding quality rating section.

Evidence level and quality rating: V/B			
Article title: Development and implementation of an independence rating scale and evaluation process for nursing orientation of new graduates	Number: 9		
Author(s): Durkin, G. J.	Publication date: 2010		
Journal: Journal for Nurses in Staff Development			
Setting: Children's Hospital Boston	Sample (composition and size): new graduate nurses (*n* = 125)		
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*			
Organizational Experience ☒Quality improvement LEVEL V Cyclical method to examine workflows, processes, or systems with a specific organization			
Was the aim of the project clearly stated?	☒Yes	☐No	
Was the method fully described?	☒Yes	☐No	
Were process or outcome measures identified?	☒Yes	☐No	
Were results fully described?	☐Yes	☒No	
Was interpretation clear and appropriate?	☒Yes	☐No	
Are components of cost/benefit or cost effectiveness analysis described?	☐Yes	☒No	☐N/A

Findings That Help Answer the EBP Question:

- Article describes process for developing a tool to assess progress of an orientee across 8 competencies: clinical judgment, clinical inquiry, caring practices, response to diversity, advocacy/moral agency, facilitation of learning, collaboration, & systems thinking
- Evaluation progress tool accessible on the intranet via individual sites for each orientee, allowing transparent tracking
- Preceptors attended a workshop and were taught use of the tool & practiced scoring different scenarios until consistently within 10% of the right ranking (addresses interrater reliability). Also taught effective feedback techniques and purpose of the evaluation as well as minimum performance expectation of the orientee on the tool (70%) by end of orientation.
- Preceptors received support & education on units and at weekly forums.
- One orientee not meeting expectations identified as poor performer long before end of orientation and orientation experiences were adjusted to provide better learning experiences and patient variety; orientee met expectations within expected length of orientation due to these adjustments.
- Barriers to evaluating progress weekly identified relating to time limitations; support by education & leadership staff allowed preceptors time to complete & after time spent with the tool, preceptors reported less than 20 minutes per week to complete evaluation.
- Barriers include team precepting and who should complete evaluation (designated "lead"

preceptor), communication between preceptors, & preceptor burnout. • Compiling orientee progress reports at the end of orientation periods resulted in determination that new graduate orientation could be reduced from 22 weeks to 20 weeks in length, as well as identifying where in orientation plateaus typically occur in order to anticipate and provide more support during these times.
Complete the corresponding quality rating section.

Evidence level and quality rating: III/A	
Article title: Perception versus reality: A comparative study of the clinical judgment skills of nurses during a simulated activity	Number: 10
Author(s): Fenske, C. L., Harris, M. A., Aebersold, M. L., & Hartman, L. S.	Publication date: 2013
Journal: The Journal of Continuing Education in Nursing	
Setting: a large Midwestern community hospital	Sample (composition and size): *N* = 74 acute care RNs Ages ranged from 21 to 64 years, (*M* = 36.2), acute care nursing experience 0 to 39 years (*M* = 6.3)
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis. ➡ Go to ***Section I: QuaNtitative***	

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☐Yes	☒No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No

If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.	**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*	**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*	**LEVEL III**

Study Findings That Help Answer the EBP Question

- Self-assessment not statistically different between ≤ 1 year & > 1 year nursing experience in Noticing and Interpreting categories, but significant difference in Responding (≤ 1 year M = 12.73, > 1 year M = 13.73, p = 0.011) and Total score (≤ 1 year M = 28.41, > 1 year M = 30.20, p = 0.029).
- Actual Performance statistically different:
- Noticing (≤ 1 year M = 5.73, > 1 year M = 9.53, p = 0.000), Interpreting (≤ 1 year M = 3.86, > 1 year M = 6.17, p = 0.000), Responding (≤ 1 year M = 7.61, > 1 year M = 12.27, p = 0.000), Total score (≤ 1 year M = 17.20, > 1 year M = 27.97, p = 0.000)
- Differences by age groups (group 1 21-25 years, group 2 26-39 years, group 3 40-64 years) Self-assessment:
- Noticing (Group 1 M = 9.61, Group 2 M = 9.22, Group 3 M = 10.18; p = 0.032), Interpreting (Group 1 M = 6.22, Group 2 M = 6.04, Group 3 M = 6.57; p = 0.190), Responding (Group 1 M = 13.00, Group 2 M = 12.52, Group 3 M = 13.75; p = 0.031), Total scores (Group 1 M = 28.83, Group 2 M = 27.78, Group 3 M = 29.14; p = 0.017)
- Actual Performance: Noticing (Group 1 M = 5.91, Group 2 M = 6.83, Group 3 M = 8.75; p = 0.003), Interpreting (Group 1 M = 4.00, Group 2 M = 4.57, Group 3 M = 5.64; p = 0.008), Responding (Group 1 M = 8.04, Group 2 M = 8.52, Group 3 M = 11.50; p = 0.002), Total scores (Group 1 M = 17.96, Group 2 M = 19.91, Group 3 M = 25.89; p = 0.002)

Skip to the **Appraisal of QuaNtitative Research Studies** section

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A

• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☒N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Evidence level and quality rating: II/A	
Article title: Clinical judgment scripts as a strategy to foster clinical judgments	Number: 11
Author(s): Hines, C. B., & Wood, F. G.	Publication date: 2016
Journal: Journal of Nursing Education	
Setting: 8-week synthesis course on complex critical care at a large public university in the SE U.S.	Sample (composition and size): 53 senior baccalaureate nursing students
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis. ➡ Go to ***Section I: QuaNtitative***	
Section I: QuaNtitative	
Level of Evidence (Study Design)	

A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☒Yes	☐No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*		**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*		**LEVEL III**
Skip to the **Appraisal of QuaNtitative Research Studies** section		

Findings That Help Answer the EBP Question:

- Introduction of standardized clinical judgment script into debriefings (as measured by independent raters scoring student performances on the LCJR) improved noticing (t = 5.109, df = 52, p = 0.000), interpreting (t = 5.463, df = 52, p = 0.000), and reflecting (t = 6.058, df = 52, p = 0.000), but a decrease in responding (t = 15.044, df = 52, p = 0.000), which is attributed to typical simulation responses as shown in their review of literature; literature review and student results demonstrate learning about responding domain occurs primarily in the debriefing.
- Student perceptions of clinical judgment skills indicated improvement on noticing, interpreting, responding (p = .000) and reflecting (p = .003).
- Clinical instructors felt students' reflection abilities improved with use of scripts (p = .002, Kappa = 0.814).
- Students survey on effectiveness of the script on fostering reflective thinking skills needed to develop clinical judgment on a 5-pt Likert scale: 1 = *Evaluate and analyze performance* (M = 4.42, SD = .57), 2 = *Analyze decision making* (M = 4.6, SD = .53), 3 = *Identify strengths and weaknesses* (M = 4.45, SD = .64), 4 = *Develop a plan for improvement* (M = 4.26, SD = .68), 5 = *Guide discussions* (M = 4.5, SD = .64) and 6 = *Was a useful tool* (M = 4.5, SD = .7).

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention	☐Yes	☐No	☒N/A

groups?			
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☒Yes	☐No	☐N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Evidence level and quality rating: III/B	
Article title: Clinical judgment development: Using simulation to create an assessment rubric	Number: 12
Author(s): Lasater, K.	Publication date: 2007
Journal: Journal of Nursing Education	
Setting: Simulation lab as part of an adult med-surg clinical course	Sample (composition and size): *N* = 39 3rd term junior nursing students enrolled in an adult med-surg clinical course were observed (*n* = 53 observations) over a 7-week time frame to develop and refine the Lasater Clinical Judgment Rubric (LCJR) Focus group of *n* = 8 students used at end of study to further test LCJR
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: **☒Mixed methods (**results reported both numerically and narratively) Both quaNtitative and quaLitative methods are used in the study design. Using both approaches, in combination, provides a better understanding of research problems than using either approach alone. Sample sizes vary based on methods used. Data collection	

involves collecting and analyzing both quaNtitative and quaLitative data in a single study or series of studies. Interpretation is continual and can influence stages in the research process.

➡ Go to ***Section III: Mixed Methods***

Section III: Mixed Methods

Level of Evidence (Study Design)

You will need to appraise both the quaNtitative and quaLitative parts of the study independently, before appraising the study in its entirety.

1. Evaluate the quaNitative part of the study using **Section I**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	III	B
2. Evaluate the quaLitative part of the study using **Section II**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	III	A

3. To determine the level of evidence, circle the appropriate study design:

- **Explanatory** sequential designs collect quaNtitative data first, followed by the quaLitative data; and their purpose is to explain quaNtitative results using quaLitative findings. The level is determined based on the level of the quaNtitative part.
- **Exploratory** sequential designs collect quaLitative data first, followed by the quaNtitative data; and their purpose is to explain quaLitative findings using the quaNtitative results. The level is determined based on the level of the quaLitative part, and it is always Level III.
- **Convergent** parallel designs collect the quaLitative and quaNtitative data concurrently for the purpose of providing a more complete understanding of a phenomenon by merging both datasets. These designs are Level III.
- **Multiphasic** designs collect quaLitative and quaNtitative data over more than one phase, with each phase informing the next phase. These designs are Level III.

Study Findings That Help Answer the EBP Question

The LCJR delineated Tanner's 4 phases into 11 dimensions (Table 2).

1) *effective noticing*: (a)Focused observation, (b) recognizing deviations from expected patterns, (c) information seeking; 2) *effective interpreting*: (d) prioritizing data, (e) making sense of data; 3) *effective responding*: (f) calm, confident manner, (g) clear communication, (h) well-planned intervention/ flexibility, (i) being skillful; 4) *effective reflecting*: (j) evaluation/self-analysis, (k) commitment to improvement

During weeks 4 & 5 scoring, clinical judgment skill score for students in primary nurse role (n = 26) (M = 22.98 pts, SD = 6.07) (maximum 44 points possible). No statistically significant variables found for day of the week, time of day, scenario order, team composition, size of small groups.

Complete the **Appraisal of Mixed Methods Studies** section

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	

Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☐Yes	☒No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☐Yes	☒No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☒N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☐Yes	☒No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			
Appraisal of a Single QuaLitative Research Study			
Was there a clearly identifiable and articulated: • Purpose?	☒Yes	☐No	
• Research question?	☒Yes	☐No	
• Justification for method(s) used?	☒Yes	☐No	
• Phenomenon that is the focus of the research?	☒Yes	☐No	
Were study sample participants representative?	☐Yes	☒No	
Did they have knowledge of or experience with the research area?	☒Yes	☐No	
Were participant characteristics described?	☒Yes	☐No	
Was sampling adequate, as evidenced by achieving saturation of data?	☒Yes	☐No	
Data analysis: • Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis	☒Yes	☐No	

and interpretation?		
• Was there a description of how data were analyzed (i.e., method), by computer or manually?	☒Yes	☐No
Do findings support the narrative data (quotes)?	☒Yes	☐No
Do findings flow from research question to data collected to analysis undertaken?	☒Yes	☐No
Are conclusions clearly explained?	☒Yes	☐No
Skip to the **Quality Rating for QuaLitative Studies** section		

Evidence level and quality rating: V/A	
Article title: Clinical judgment: The last frontier for evaluation	Number: 13
Author(s): Lasater, K.	Publication date: 2011
Journal: Nurse Education in Practice	
Setting: N/A	Sample (composition and size): N/A
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*	

☒**Literature review LEVEL V** Summary of selected published literature including scientific and nonscientific such as reports of organizational experience and opinions of experts		
• Is subject matter to be reviewed clearly stated?	☒Yes	☐No
• Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No
• Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No
• Are gaps in the literature identified?	☒Yes	☐No
• Are recommendations made for future practice or study?	☒Yes	☐No

Findings That Help Answer the EBP Question

- Strategies to evaluate & foster clinical judgment development: formulating thought questions, reflection, self-evaluation.
- Students may not reach exemplary on the rubric by the end of the program, but it helps students identify life-long learning needed in nursing.
- Need for further research on how to develop nursing students' clinical judgment, impact of reflection on clinical judgment, how preceptors can bridge the gap between academe and practice.
- LCJR provides a common language for "students, nursing educators, and preceptors to discuss a complex but critical topic" (p. 87). Having a common language can assist in

developing questions to elicit thought processes of the student (or orientee). • Table 2 (p. 89) provides examples of higher level questions that can be used within each domain of the CJM/LCJR dimensions to elicit deeper thinking.
Complete the corresponding quality rating section.

Evidence level and quality rating: II/A	
Article title: Evaluating the clinical judgment of newly hired staff nurses	Number: 14
Author(s): Lasater, K., Nielsen, A. E., Stock, M., & Ostrogorsky, T. L.	Publication date: 2015
Journal: The Journal of Continuing Education in Nursing	
Setting: large, tertiary-level medical center hospital in Oregon	Sample (composition and size): *N* = 202 new hire nurses (NHNs) with varying levels of experience
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis. ➡ Go to ***Section I: QuaNtitative***	

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☒Yes	☐No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**

If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*	**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*	**LEVEL III**

Study Findings That Help Answer the EBP Question

- NHNs with < 1 yr. experience (n = 71) had lower total scores (μ = 11.70, SD = 2.37, range = 7 - 16) than NHNs with > 1 year of experience (μ = 13.01, SD = 2.18, range = 8 - 16) on total CJ ($p < .05$). NHNs with no experience (μ = 11.70, SD = 2.37) significantly lower than NHNs with 3-5.9 years (μ = 13.54, SD = 2.11) or ≥ 6 years of experience (μ = 12.96, SD = 2.09) ($p < .001$).
- No difference in total CJ between ADN and BSN. One aspect, *interpreting*, was significant ($p < .05$), with ADN scores higher (μ = 3.48, SD = 0.68) than BSN scores (μ = 3.20, SD = 0.71).
- 10 NHNs scored at beginning level in at least one dimension; 9 NHNs still employed at 9 months post-assessment; managers provided anecdotal evidence of progress: n = 1 exceeding expectations, n = 5 meeting expectations, n = 2 on probation, n = 1 whose manager had concerns but NHN not on probation.

Skip to the **Appraisal of QuaNtitative Research Studies** section

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☐Yes	☒No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A

If surveys or questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☒N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Evidence level and quality rating: I/A	
Article title: New graduate nurse experiences in clinical judgment: What academic and practice educators need to know	Number: 15
Author(s): Lusk Monagle, J., Lasater, K., Stoyles, S., & Dieckmann, N.	Publication date: 2018
Journal: Nursing Education Perspectives	
Setting: 3 community hospitals on East coast & 1 medical research center on West coast	Sample (composition and size): *N* = 74 NGNs employed for < 3 months
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**Mixed methods (**results reported both numerically and narratively) Both quaNtitative and quaLitative methods are used in the study design. Using both approaches, in combination, provides a better understanding of research problems than using either approach alone. Sample sizes vary based on methods used. Data collection involves collecting and analyzing both quaNtitative and quaLitative data in a single study or series of studies. Interpretation is continual and can influence stages in the research process. ➡ Go to ***Section III: Mixed Methods***	

Section III: Mixed Methods		
Level of Evidence (Study Design)		
You will need to appraise both the quaNtitative and quaLitative parts of the study independently, before appraising the study in its entirety.		
Evaluate the quaNitative part of the study using **Section I**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	I	A
Evaluate the quaLitative part of the study using **Section II**.	**Level**	**Quality**
Insert here the level of evidence and overall quality for this part:	III	A
To determine the level of evidence, circle the appropriate study design:		

- **Explanatory** sequential designs collect quaNtitative data first, followed by the quaLitative data; and their purpose is to explain quaNtitative results using quaLitative findings. The level is determined based on the level of the quaNtitative part.

Study Findings That Help Answer the EBP Question

Quantitative results:

- No differences between groups on HSRT scores or subscores. No correlation between CWLC high scores and LCJR high scores. No differences over the year-long study between groups in CWLC total scores. Both groups had increased CWLC subscore in *Being Valued* (M = 3.79(pre) to M = 3.96(post), p = .02).
- Work Satisfaction subscale of CWLC decreased more in control group (M = 4.21, pre; M = 3.76, post) than experimental group (M = 3.97, pre; M = 3.93, post) (p = .04).

Qualitative themes:

1) enhancing communication: between themselves & patients, family members, other nurses, larger team

2) interprofessional support: trying to get med team's attention; advocating effectively, how to communicate with team

3) complexity of patients: noticed gaps in their knowledge/assessment of complex patients, anticipating issues before they happen

4) appreciating role of the nurse: did not emerge until 10-12 month reflection; lack of confidence as hindrance & opportunity for growth

Complete the **Appraisal of Mixed Methods Studies** section

Appraisal of Mixed Methods Studies[3]			
Was the mixed-methods research design relevant to address the quaNtitative and quaLitative research questions (or objectives)?	☒Yes	☐No	☐N/A
Was the research design relevant to address the quaNtitative and quaLitative aspects of the mixed-methods question (or objective)?	☒Yes	☐No	☐N/A
For convergent parallel designs, was the integration of quaNtitative and quaLitative data (or results) relevant to address the research question or objective?	☐Yes	☐No	☒N/A
For convergent parallel designs, were the limitations associated with the integration (for example, the divergence of quaLitative and quaNtitative data or results) sufficiently addressed?	☐Yes	☐No	☒N/A

Complete the **Quality Rating for Mixed-Method Studies** section (below)

Section I: QuaNtitative

Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☒Yes	☐No
2. Was there a control group?	☒Yes	☐No

3. Were study participants randomly assigned to the intervention and control groups?	☒Yes	☐No	
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.			**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*			**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*			**LEVEL III**
Skip to the **Appraisal of QuaNtitative Research Studies** section			
Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☒Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☒Yes	☐No	☐N/A
• Were all groups equally treated except for the intervention group(s)?	☒Yes	☐No	☐N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☒Yes	☐No	☐N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Section II: QuaLitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes **this is Level III**	☐No **go to II B**
Complete the **Appraisal of Single QuaLitative Research Study** section (below)		
Appraisal of a Single QuaLitative Research Study		
Was there a clearly identifiable and articulated: • Purpose?	☒Yes	☐No
• Research question?	☒Yes	☐No
• Justification for method(s) used?	☒Yes	☐No
• Phenomenon that is the focus of the research?	☒Yes	☐No
Were study sample participants representative?	☒Yes	☐No
Did they have knowledge of or experience with the research area?	☒Yes	☐No
Were participant characteristics described?	☒Yes	☐No
Was sampling adequate, as evidenced by achieving saturation of data?	☒Yes	☐No
Data analysis: • Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis and interpretation?	☒Yes	☐No
• Was there a description of how data were analyzed (i.e., method), by computer or manually?	☒Yes	☐No
Do findings support the narrative data (quotes)?	☒Yes	☐No
Do findings flow from research question to data collected to analysis undertaken?	☒Yes	☐No
Are conclusions clearly explained?	☒Yes	☐No
Skip to the **Quality Rating for QuaLitative Studies** section		

Evidence level and quality rating: V/A	
Article title: The Lasater clinical judgment rubric as a framework to enhance clinical judgment in novice and experienced nurses	Number: 16
Author(s): Miraglia, R., & Asselin, M. E.	Publication date: 2015
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*		
☒**Literature review LEVEL V** Summary of selected published literature including scientific and nonscientific such as reports of organizational experience and opinions of experts ☐**Integrative review LEVEL V** Summary of research evidence and theoretical literature; analyzes, compares themes, notes gaps in the selected literature		
• Is subject matter to be reviewed clearly stated?	☒Yes	☐No
• Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No
• Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No
• Are gaps in the literature identified?	☒Yes	☐No
• Are recommendations made for future practice or study?	☒Yes	☐No
Findings That Help Answer the EBP Question • Provides thorough review of evidence supporting use of LCJR by setting (academic, professional). • Highlights how LCJR provides a common language for use between student and faculty, as well as promotes higher level questioning to develop clinical judgment. • LCJR can be used for reflective practice. • LCJR provides opportunity for the preceptor to focus beyond orienting to tasks and rather incorporate clinical judgment development into dialogue and activities with the orientee.		
Complete the corresponding quality rating section.		

Evidence level and quality rating: V/A	
Article title: Clinical judgment: Developing skills in reflection	Number: 17
Author(s): Modic, M. B.	Publication date: 2014
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*	
☒**Expert opinion LEVEL V** Opinion of one or more individuals based on clinical expertise	

• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☐Yes	☒No

Findings That Help Answer the EBP Question

- Reflecting in action should occur simultaneously with the noticing, interpreting, and responding phases of clinical judgment and is an important self-monitoring technique the nurse should use.
- Role-modeling reflective behavior sets the expectation and permission to involve others in reflection, ask questions, and gain feedback. This includes modeling reflection on action—how the nurse reflects on the clinical day or events, such as during the commute home or when working out.
- Being deliberate in reflection is important for preceptors as the experienced nurse already reflects as needed and has it built into their practice, whereas new nurses do not necessarily do this habitually and/or spend much more time doing so as they go over every detail of the day.
- Types of reflective groups include critical event debriefing, informal shift debriefs, and nurse-to-nurse sharing of clinical narratives.

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: Tanner's model of clinical judgment applied to preceptorship: Part 1.	Number: 18
Author(s): Modic, M. B., & Schoessler, M.	Publication date: 2013a
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question?

☒Yes

☐No- *Do not proceed with appraisal of this evidence*

☒Expert opinion LEVEL V

Opinion of one or more individuals based on clinical expertise

• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☐Yes	☒No

Findings That Help Answer the EBP Question

- Overview of Tanner's CJM provided, focusing on the nonlinear process of clinical judgment.
- If a preceptor is concerned about an orientee's ability to notice, they need to determine where the orientee is struggling.
- To effectively notice, the nurse needs background knowledge, contextual knowledge, and knowledge of the patient.

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: Tanner's model of clinical judgment, Part 2	Number: 19
Author(s): Modic, M. B., & Schoessler, M.	Publication date: 2013b
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question?

☒Yes

☐No- *Do not proceed with appraisal of this evidence*

☒Expert opinion LEVEL V

Opinion of one or more individuals based on clinical expertise

• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☐Yes	☒No

Findings That Help Answer the EBP Question

- Questions to help assess and develop an orientee's background knowledge, contextual knowledge, and knowledge of the patient provided. Useful strategies for educating preceptors on how to apply Tanner's model when orienting new nurses and assessing clinical judgment.
- Provides questions preceptors can ask as the orientee is planning the day and once the orientee is about to make rounds. Tips for designing experiences to help develop background knowledge also provided, especially the use of concept-based learning.
- Contextual knowledge is framed as the workplace culture/environment, such as required equipment in a hospital room or availability of safety measures that should be used in that institution for patients at fall risk.
- To develop knowledge of the particular patient, in-room shift hand-off is emphasized as a strategy for the orientee and preceptor to meet the patient together, compare off-going nurse's perception to their own, and establish a baseline knowledge that can be compared/contrasted later in the shift to show patient progress or deterioration.

Complete the corresponding quality rating section.

Evidence level and quality rating:	
Article title: Developing Skills in Interpretation	Number: 20
Author(s): Modic, M. B., & Schoessler, M.	Publication date: 2014a
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*	

☒Expert opinion LEVEL V Opinion of one or more individuals based on clinical expertise		
• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☐Yes	☒No

Findings That Help Answer the EBP Question

- A detailed example of differences in interpretation (and associated responses, including further assessment) is provided to contrast a beginner and expert nurse's clinical judgment.
- Concept-based learning discussed again as a strategy to develop skills in interpretation, including posing conflicting cases and asking why questions.
- Case-based learning posed as critical to learning interpretation; it involves posing a case (i.e., case study) and taking the learner through the case, adding complexity, and posing questions and providing more information to get the learner actively involved in the case.

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A	
Article title: Clinical judgment: Developing the skill of responding	Number: 21
Author(s): Modic, M. B., & Schoessler, M.	Publication date: 2014b
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): N/A

Does this evidence address my EBP question?

☒Yes

☐No- *Do not proceed with appraisal of this evidence*

☒Expert opinion LEVEL V Opinion of one or more individuals based on clinical expertise		
• Has the individual published or presented on the topic?	☒Yes	☐No
• Is the author's opinion based on scientific evidence?	☒Yes	☐No
• Is the author's opinion clearly stated?	☒Yes	☐No
• Are potential biases acknowledged?	☐Yes	☒No

Findings That Help Answer the EBP Question

- Skilled responding requires accounting for patient needs, skills and resources of the nurse, and timing, resources, and skills of the organization and team.
- Preceptors can assist orientees with recognizing and prioritizing what responses are appropriate and necessary by asking orientees prioritization questions throughout the shift.
- To teach responding, preceptors can reinforce knowledge the orientee already has (e.g., how to perform the skill), then walk the orientee through the entire process, including finding & utilizing resources within the organization, preparing the patient for the experience, and anticipating patient response.
- Asking "what if" questions and how the nurse might know if the intervention was successful starts the reflection on action process. The preceptor needs to provide debriefing frequently and find ways to help the orientee integrate "what needs to be done" with "how" and "why" in order to build conceptual knowledge. This clustering technique fosters learning and aids in retaining the information.

Complete the corresponding quality rating section.

Evidence level and quality rating: III/A	
Article title: A framework to support preceptors' evaluation and development of new nurses' clinical judgment	Number: 22
Author(s): Nielsen, A., Lasater, K., Stock, M.	Publication date: 2016
Journal: Nurse Education in Practice	
Setting: University hospital in Oregon	Sample (composition and size): *N* = 7 experienced preceptors who had used both the former and new assessment processes with new graduate nurses (NGN)

Does this evidence address my EBP question?

☒Yes

☐No-*Do not proceed with appraisal of this evidence*

Is this study:

☒**QuaLitative** (collection, analysis, and reporting of narrative data)

Rich narrative documents are used for uncovering themes; describes a problem or condition from the point of view of those experiencing it. Common methods are focus groups, individual interviews (unstructured or semi structured), and participation/observations. Sample sizes are small and are determined when data saturation is achieved. Data saturation is reached when the researcher identifies that no new themes emerge and redundancy is occurring. Synthesis is used in data analysis. Often a starting point for studies when little research exists; may use results to design empirical studies. The researcher describes, analyzes, and interprets reports, descriptions, and observations from participants.

➡ Go to ***Section II: QuaLitative***

Section II: QuaLitative

Level of Evidence (Study Design)

A	Is this a report of a single research study?	☒Yes **this is Level III**	☐No **go to II B**

Study Findings That Help Answer the EBP Question

- Need for a framework: Helpful for giving a baseline, compare it to NGN's experience, opens conversation
- Framework supports Tanner's model: Noticing—using questions to increase NGN's observation skills
- Interpreting—Tying in previous experiences to make sense of current situation; identify priorities
- Responding—based on interpretation; nursing tasks vs. patient-centered care; lack of confidence can lead to blindly following orders; overconfidence can lead to poor decisions: need for accurate self-evaluation
- Reflection—learning from situations via guiding questions, role modeling
- Value of framework for evaluating performance: Allows tracking of performance and goal setting; measurable progress and more meaningful than check-off lists for skills
- Preceptors have a close relationship with their orientee, allowing them better judgment of orientee's progress.
- Providing a clinical judgment framework assists preceptors in giving relevant feedback, judging progress more objectively, & support questions and discussion to promote development of clinical judgment.
- Table 1 provides focus group semi-structured interview questions that could be used in my project's interviews with preceptors after they implement the LCJR as a progress review tool.

Complete the **Appraisal of Single QuaLitative Research Study** section (below)

Appraisal of a Single QuaLitative Research Study		
Was there a clearly identifiable and articulated: • Purpose?	☒Yes	☐No
• Research question?	☒Yes	☐No
• Justification for method(s) used?	☒Yes	☐No
• Phenomenon that is the focus of the research?	☒Yes	☐No
Were study sample participants representative?	☒Yes	☐No
Did they have knowledge of or experience with the research area?	☒Yes	☐No
Were participant characteristics described?	☒Yes	☐No
Was sampling adequate, as evidenced by achieving saturation of data?	☒Yes	☐No
Data analysis: • Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis and interpretation?	☒Yes	☐No
• Was there a description of how data were analyzed (i.e., method), by computer or manually?	☒Yes	☐No
Do findings support the narrative data (quotes)?	☒Yes	☐No
Do findings flow from research question to data collected to analysis undertaken?	☒Yes	☐No
Are conclusions clearly explained?	☒Yes	☐No
Skip to the **Quality Rating for QuaLitative Studies** section		

Evidence level and quality rating: V/A	
Article title: Interventions used by nurse preceptors to develop critical thinking of new graduate nurses: A systematic review	Number: 23
Author(s): Schuelke, S., & Barnason, S. (2017).	Publication date: 2017
Journal: Journal for Nurses in Professional Development	
Setting: N/A	Sample (composition and size): *N* = 9 studies addressing interventions/strategies implemented by preceptors to promote critical thinking in new graduate nurses
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Study Findings That Help Answer the EBP Question • Common theme identified preceptors need preparation on educational theory & practice. Feedback, evaluation, and facilitating critical thinking common topics in educating preceptors. • EBP strategies across studies emphasized learning principles, providing input & feedback	

to new nurses, and educator involvement in the discussion, feedback, evaluation and critical thinking development.

- Preceptors need to master interactive communication due to new nurse need for input, feedback, and individualization & customization of orientation and educational interventions.
- The NES is pivotal to planning & implementing preceptor education & providing ongoing support.
- Tools used to develop/assess critical thinking skills in new graduate nurses must meet both preceptor and new grad needs and work within the busy clinical environment.
- Current best practices appear to be experiential learning, coaching, feedback, and evaluation.

☒**Integrative review LEVEL V** Summary of research evidence and theoretical literature; analyzes, compares themes, notes gaps in the selected literature		
• Is subject matter to be reviewed clearly stated?	☒Yes	☐No
• Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No
• Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No
• Are gaps in the literature identified?	☒Yes	☐No
• Are recommendations made for future practice or study?	☒Yes	☐No
Complete the corresponding quality rating section.		

Evidence level and quality rating: III/B	
Article title: Preceptors' perceptions of a new evaluation tool used during nursing orientation	Number: 24
Author(s): Steffan, K. & Goodin, H.	Publication date: 2010
Journal: Journal for Nurses in Staff Development	
Setting: 3 system not-for-profit hospitals in central Ohio	Sample (composition and size): *N* = 38 preceptors
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests	

are used in data analysis. ➡ Go to ***Section I: QuaNtitative***

Evidence level and quality rating: III/B	
Article title: Examining the relationship between clinical judgment and nursing actions in prelicensure students	Number: 25
Author(s): Stuedemann Fedko, A., & Thomas Dreifuerst, K.	Publication date: 2017
Journal: Nurse Educator	
Setting: Midwest U.S. university nursing simulation lab	Sample (composition and size): *N* = 22 senior level nursing students in a BSN program acting as primary nurse during simulation
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis. ➡ Go to ***Section I: QuaNtitative***	

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☐Yes	☒No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**

If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*	**LEVEL II**
If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*	**LEVEL III**

Study Findings That Help Answer the EBP Question

- Observation of the simulation and debriefing was sufficient for scoring each student on the LCJR.
- Total LCJR mean score was 31.64 (out of 44 possible). Total scores moderately correlate to students' actions (r = .36, p = .04), indicating higher LCJR scores correlated to completing more of the indicated nursing actions. Individual domain scores in noticing (r = .13, p = .28), interpreting (r = .08, p = .35), and reflecting (r = .13, p = .27) did not correlate to indicated nursing actions.
- Responding scores on LCJR correlated moderately to performance of indicated actions (r = .43, p = .02), however, on average only 44% of all indicated actions were performed.

Skip to the **Appraisal of QuaNtitative Research Studies** section

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☐Yes	☐No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☐Yes	☒No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A

If surveys or questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☒N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A
Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Evidence level and quality rating: V/A	
Article title: Thinking like a nurse: A research-based model of clinical judgment in nursing	Number: 26
Author(s): Tanner, C. A.	Publication date: 2006
Journal: Journal of Nursing Education	
Setting: N/A Integrative literature review	Sample (composition and size): *N* = 191 nursing research studies on clinical judgment
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*	

☒Integrative review LEVEL V Summary of research evidence and theoretical literature; analyzes, compares themes, notes gaps in the selected literature		
• Is subject matter to be reviewed clearly stated?	☒Yes	☐No
• Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No
• Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No
• Are gaps in the literature identified?	☒Yes	☐No
• Are recommendations made for future practice or study?	☒Yes	☐No

Findings That Help Answer the EBP Question
Five conclusions from literature:
1) Clinical judgments more influenced by nurses' experience than objective data about current situation
2) Sound clinical judgment requires to some degree knowing current patient's typical pattern of responses & engagement with patient & patient's concerns
3) Clinical judgments influenced by context in which situation occurs and culture of the unit
4) Nurses use a variety of reasoning patterns alone & in combo: analytic processes, intuition, & narrative thinking

5) Reflection on practice triggered by breakdown in clinical judgment & is necessary for development of clinical knowledge & improvement in reasoning Proposed Clinical Judgment Model: Noticing→ Interpreting→ Responding→ Reflecting
Complete the corresponding quality rating section.

Evidence level and quality rating: V/A		
Article title: Critical thinking versus clinical reasoning versus clinical judgment	Number: 27	
Author(s): Victor-Chmil	Publication date: 2013	
Journal: Nurse Educator		
Setting: N/A	Sample (composition and size): N/A	
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*		
☒**Literature review LEVEL V** Summary of selected published literature including scientific and nonscientific such as reports of organizational experience and opinions of experts ☐**Integrative review LEVEL V** Summary of research evidence and theoretical literature; analyzes, compares themes, notes gaps in the selected literature		
• Is subject matter to be reviewed clearly stated?	☒Yes	☐No
• Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No
• Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No
• Are gaps in the literature identified?	☒Yes	☐No
• Are recommendations made for future practice or study?	☐Yes	☒No
Findings That Help Answer the EBP Question • Critical thinking: cognitive process used for analyzing knowledge • Clinical reasoning: cognitive & metacognitive processes used for analyzing knowledge in relation to a specific clinical situation or patient—applying critical thinking to specific clinical situations • Clinical judgment: cognitive, psychomotor, & affective processes demonstrated through behaviors and actions • Critical thinking is not discipline-specific, so any reliable and valid tool for measuring critical thinking could be applied to nursing • Critical thinking and clinical judgment measurements not correlated		

- No valid & reliable tool to measure clinical reasoning exists, but clinical reasoning can be developed through the use of decision trees, algorithms, thinking aloud, & reflective journaling
- Clinical judgment can be measured using the Lasater Clinical Judgment Rubric

Complete the corresponding quality rating section.

Evidence level and quality rating: V/A			
Article title: Psychometric Properties of the Lasater Clinical Judgment Rubric	Number: 28		
Author(s): Victor-Chmil, J. & Larew, C.	Publication date: 2013		
Journal: International Journal of Nursing Education Scholarship			
Setting: N/A	Sample (composition and size): N/A		
Does this evidence address my EBP question? ☒Yes ☐No- *Do not proceed with appraisal of this evidence*			
☒**Integrative review LEVEL V** Summary of research evidence and theoretical literature; analyzes, compares themes, notes gaps in the selected literature			
Is subject matter to be reviewed clearly stated?	☒Yes	☐No	
Is literature relevant and up-to-date (most sources are within the past five years or classic)?	☒Yes	☐No	
Of the literature reviewed, is there a meaningful analysis of the conclusions across the articles included in the review?	☒Yes	☐No	
Are gaps in the literature identified?	☒Yes	☐No	
Are recommendations made for future practice or study?	☒Yes	☐No	

Findings That Help Answer the EBP Question:

- Inter-rater reliability generally reported in the literature as being good (> .80), but many studies do not adequately report methods, sample sizes, or are published in peer-reviewed journals which limit reliability of these reports. Also, some studies report a significant range of reliability scores, from as low as 0.402 interclass correlations coefficient for inter-rater reliability, to as high as 0.984.
- One study suggested expanding LCJR to include "patient safety" and "sentinel events" dimensions.
- Construct validity reported for entire tool at 0.95, and .88 for noticing, interpreting, responding, and .86 for reflecting. Individual dimensions (11) reported *z* scores ranging from 0.60 to 0.96 (good to very good).
- Another study reported content validity for LCJR stating it is capable of measuring all three Bloom's taxonomy learning domains and 6 of 8 AACN Baccalaureate Essentials.
- Other studies reviewed reported qualitative support of content validity of LCJR.

Complete the corresponding quality rating section.

Evidence level and quality rating: II/B	
Article title: Implementation of a standardized evaluation tool to improve preceptor confidence	Number: 29
Author(s): Wilburn, S., Jones, S., & Hamilton, B. K.	Publication date: 2018
Journal: Journal for Nurses in Professional Development	
Setting: 2 urban medical centers and 1 community hospital all faith-based and not-for-profit in SE U.S.	Sample (composition and size): *N* = 15 preceptors from med-surg units
Does this evidence address my EBP question? ☒Yes ☐No-*Do not proceed with appraisal of this evidence*	
Is this study: ☒**QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis.	

Section I: QuaNtitative		
Level of Evidence (Study Design)		
A Is this a report of a single research study?	☒Yes	☐No **Go to B**
1. Was there manipulation of an independent variable?	☒Yes	☐No
2. Was there a control group?	☐Yes	☒No
3. Were study participants randomly assigned to the intervention and control groups?	☐Yes	☒No
If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study.		**LEVEL I**
If **Yes to questions 1 and 2 and No to question 3** or **Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).*		**LEVEL II**

If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).*	**LEVEL III**
Study Findings That Help Answer the EBP Question • Nsg experience ranged from 1-36 years (μ = 7.47), preceptor age ranged from 20-60 years (μ = 34.13). • *n* = 13 reported NNCS easy to read, *n* = 14 reported NNCS appropriate for evaluating NGNs, *n* = 15 reported instructions for use of NNCS clear and easy to follow. • C-Scale scores improved from baseline (μ = 21.2, *SD* = 2.68) to postintervention (μ = 22.68, *SD* = 1.75) (*t*(13) = -2.61, *p* < .05). • Preintervention: 33% of preceptors with prior preceptor training absolutely certain their evaluation of NGN correct compared to 13.3% of preceptors with no prior training ($\chi^2(1) = 1.727$, *p* > .05) • Postintervention: 33% of the 7 from preintervention who felt fairly certain became certain and 13.3% became absolutely certain their evaluation of NGN correct ($\chi^2(2) = 3.233$, *p* > .05)	
Skip to the **Appraisal of QuaNtitative Research Studies** section	

Appraisal of QuaNtitative Research Studies			
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☒Yes	☐No	
Was the purpose of the study clearly presented?	☒Yes	☐No	
Was the literature review current (most sources within the past five years or a seminal study)?	☒Yes	☐No	
Was sample size sufficient based on study design and rationale?	☐Yes	☒No	
If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☒N/A
• If multiple settings were used, were the settings similar?	☐Yes	☐No	☒N/A
• Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☒N/A
Are data collection methods described clearly?	☒Yes	☐No	
Were the instruments reliable (Cronbach's □[alpha] ≥ 0.70)?	☒Yes	☐No	☐N/A
Was instrument validity discussed?	☒Yes	☐No	☐N/A
If surveys or questionnaires were used, was the response rate ≥ 25%?	☒Yes	☐No	☐N/A
Were the results presented clearly?	☒Yes	☐No	
If tables were presented, was the narrative consistent with the table content?	☒Yes	☐No	☐N/A

Were study limitations identified and addressed?	☒Yes	☐No	
Were conclusions based on results?	☒Yes	☐No	
Complete the **Quality Rating for QuaNtitative Studies** section			

Appendix F

Literature Review Table

Article Number	1
Author and Date	Adamson, K. A., Gubrud, P., Sideras, S., & Lasater, K. (2011).
Evidence Type	Literature review of articles testing reliability and validity of LCJR
Sample, Sample Size, Setting	nurse educators/faculty; numbers vary per study reviewed Academic testing of the LCJR in simulated scenarios
Findings that Help Answer the EBP Question	Adamson study provided 1-hour telephone or videoconference training on use of LCJR, including a sample scenario and demonstration of correct scoring. Adamson study reliability: intraclass correlation coefficient (ICC) = 0.889. Validity: intended levels of clinical judgment within each scenario scored consistently and appropriately across all raters (n = 29 nurse educators) Gubrud-Howe study used a 7-hour live training with 5 prerecorded scenarios on use of LCJR. Gubrud-Howe study reliability: Interrater reliability from training established ($\alpha = 0.87$) (n = 2 nurse faculty); 96% agreement between raters when pretest/posttest scores combined for students evaluated. Sideras study provided a 6-hour seminar that covered Tanner's model of clinical judgment, and training on sources of rater error and opportunity to practice with goal to have > 90% agreement by end of seminar. Agreement level not met, so follow-up modules developed and raters (n = 4 faculty) completed on their own until agreement level met. Sideras study reliability: 57% to 100% agreement, indicating a wide variability; validity indicated by raters accurately identifying the student's level (e.g., junior or senior).
Observable Measures	Type and length of rater training on use of LCJR Interrater reliability Validity of LCJR
Limitations	LCJR demonstrated reliability only when the raters or the cases remained stable; if raters and cases varied, a wide range of reliability results Only used in rating nursing students during simulation
Evidence Level, Quality	V/A
Article Number	2
Author and Date	Cappelletti, A., Engel, J. K., Prentice, D. (2014).
Evidence Type	Systematic review
Sample, Sample Size, Setting	15 research studies (9 qualitative, 5 quantitative, 1 mixed methods) published since Tanner's (2006) review on clinical judgment and reasoning in nursing
Findings that Help Answer the EBP Question	Body of evidence continues to mostly support Tanner's CJM and the 5 conclusions: 1) CJ more influenced by what nurse brings to the situation than by objective data available at hand (conflicting evidence based on experience level), 2) Sound CJ depends to some extent on knowing the patient and their typical responses and engaging with patient (confirmed), 3) CJ influenced by context and culture in which the situation occurs (includes broader culture, e.g., country of practice), 4) nurses use a variety of reasoning patterns (analytic processes, intuition, & narrative thinking) (confirmed; reasoning pattern(s) used may not lead to sound CJ), and 5) reflection on practice typically triggered by a breakdown in CJ and is required to develop and improve CJ (confirmed, but only addressed by 1 study).

	Literature supports adding a sixth conclusion: Education strategies to improve CJ may influence what the nurse brings to a situation. No one educational strategy was identified as "best practice" for developing CJ. This conclusion takes "understanding CJ" to "responding" by finding ways to teach & develop CJ.
Observable Measures	N/A
Limitations	Only reviewed English language studies; some studies outside of North America, so cultural & educational differences may impact generalizability.
Evidence Level, Quality	III/A
Article Number	3
Author and Date	Chan, H. YL., So, W. KW., Aboo, G., Sham, A. SY., Fung, G. SC., Law, W. SL., Wong, H. LH., Chau, C. LT., Tsang, L. F., Wong, C., & Chair, S. Y. (2019).
Evidence Type	Sequential mixed methods explanatory design
Sample, Sample Size, Setting	Nurse preceptors from 3 acute public hospitals in Hong Kong. *N* = 331 eligible preceptors, *n* = 260 completed survey (78.8% response rate), 10 completed focus group interviews
Findings that Help Answer the EBP Question	On Clinical Teaching Behavior Inventory (CTBI), overall mean score 82.9 (out of 115, SD = 10.5). "Using appropriate teaching strategies" domain ranked highest (mean = 3.65, SD = 0.56), and "Providing feedback and evaluation" domain the lowest (mean = 3.51, SD = 0.60). Within "Providing feedback & evaluation" domain, the item "I use the evaluation form to objectively evaluate the performance of new nurses" mean score 3.30 (SD = 3.3; 16.5% strongly disagree/disagree, 40% neutral, 43.5% strongly agree/agree). Top five topics identified as most important to preceptor training were "How to teach: Critical thinking" (30.4%), "How to teach: Prioritizing" (27.3%), "Teaching techniques" (26.2%), "Conflict management" (23.8%), and "Teamwork" (22.7%). Least important topics were "Sequencing of assignments/progression of orientee" (3.8%), "Classes available for preceptors" (3.8%), "Paperwork" (4.2%), "How to access clinical resources" (4.2%), and "Expectations of the preceptor" (5.0%). Qualitative interviews echoed survey results and found 2 main themes related to the precepting experience: Challenges in the nurse preceptor role, with subcategories of *tension between clinical duty and providing guidance*, & *strained relationship with co-workers*, and expectations towards support for nurse preceptors with subcategories of *recognition from management level, additional focus on coaching tactics*, & *opportunities for reciprocal learning and collegiate support.* Regarding opportunities for learning, some expressed learning through scenarios or experience sharing most important to understanding how to effectively precept.
Observable Measures	Questionnaire included demographic questions, the CTBI, and RN Preceptor Learning Needs Assessment. CTBI includes 23 items scored 1-5 (1 = strongly disagree, 5 = strongly agree), with a maximum possible score of 115, and assesses the preceptor's clinical teaching behaviors. RN Preceptor Learning Needs Assessment identifies 29 education topics from the literature and asks preceptors to rate the importance of each topic 1 to 5 (1 = not important at all, 5 = extremely important), then asks them to rank the top five most important topics they want included in preceptor training.
Limitations	Focus group informants not representative of those who took survey (76.5% female in larger sample, 40% female in focus groups); some of the informants may have been recommended by their managers, introducing possible bias. Limited generalizability d/t cultural and nursing practice differences between Hong Kong and U.S.
Evidence Level, Quality	III/A
Article Number	4
Author and Date	Chen, S.-H., Chien, L.-Y., Kuo, M.-L., Li, Y.-H., Chiang, M.-C., & Liu, Y-C. (2017).

Evidence Type	Cross-sectional survey design
Sample, Sample Size, Setting	*N* = 105 post-graduate year nurse-preceptor pairs with *n* = 99 responding (94.2% response rate) from an academic medical center in Taiwan
Findings that Help Answer the EBP Question	Overall assessment of competence scores not significantly different between preceptors (mean = 12.3, SD = 2.5) and preceptees (mean = 12.8, SD = 2.1) ($p = .075$). No significant difference in subscales of clinical care, research awareness, or professional growth. Significant difference in scores ($p < .05$) between preceptees and preceptors in communication (mean = 14.0, SD = 2.6 versus mean = 13.3, SD = 2.7, respectively), patient education (mean = 12.6, SD = 2.5 versus mean = 11.9, SD = 3.0, respectively), and management (mean = 12.7, SD = 2.5 versus mean = 11.9, SD = 3.2, respectively). Preceptors with more months of clinical experience experienced greater discrepancies between their preceptee's competence ratings in clinical care ($\beta = .28$, $p < .05$), communication ($\beta = .28$, $p < .05$), patient education ($\beta = .35$, $p < .01$), research awareness ($\beta = .39$, $p < .01$), and overall competence ($\beta = .35$, $p < .01$).
Observable Measures	Demographic questionnaire that assessed items associated with clinical competence (age, nursing education level, hospital unit, clinical ladder position, and clinical experiences), as well as preceptor data regarding clinical and teaching experience and number of preceptees previously supported. Nursing Competence Questionnaire (NCQ) contained 58 items assessing perceived competence in clinical care, communication, research awareness, patient education, management, & professional growth. Scored on 5-point Likert scale for importance (1 = extremely unimportant, 5 = extremely important) and adequacy (1 = extremely inadequate, 5 = extremely adequate). Final score calculated to add weight to importance of nursing competency: ((adequacy score – 3) X (importance score)) + 10 to result in a range from 0 to 20. Higher scores indicate greater competency.
Limitations	Did not measure the amount of time preceptors spent with preceptees which could affect the preceptor's ratings of the preceptee's competence. Only conducted in one medical center in Taiwan, limiting generalizability. Different nursing structures in Taiwan from U.S., as well.
Evidence Level, Quality	III/A
Article Number	5
Author and Date	Condrey, T. (2015).
Evidence Type	Evaluation of a project to implement a preceptor training program.
Sample, Sample Size, Setting	Preceptors participating in a new preceptor training program (*n* = 36) at a large regional medical center in Georgia
Findings that Help Answer the EBP Question	Developed a preceptor training program, incentives to participate, and measurement tools. Preceptor training program included online instruction, divided into 3 modules to prevent overwhelming learners, and a 4-hour in-person class. Contact hours were awarded to preceptors completing the online modules as well as the in-person class. Recruitment of preceptors done by unit managers, distributed flyers, and unit-to-unit visits to answer questions (did not clarify who did the visits). Part 1 pretest mean scores 60% and posttest mean scores 95%. Contact hour evaluation for Part 1 indicated preceptors evaluated the online modules positively, with all responses except one neutral response being strongly agree/agree. 86% strongly agreed program was satisfactory overall. Part 2 class contact hour evaluations overall positive, with only 3 preceptors stating disagree/strongly disagree that the length of the program was adequate, and only one disagreeing that the program was offered at a convenient time. 81% strongly agreed program was satisfactory overall. Preceptor survey results (*n* = 14): mean scores (out of 6) for perception of preceptor benefits and rewards was 5.27 (SD = 0.65), perception of preceptor support was 4.19 (SD = 0.74), and commitment to preceptor role was 4.75 (SD = 1.15). Perception of rewards and benefits

	strongly correlated to support (r = 0.638, p = 0.014) and role commitment (r = 0.862, $p \leq 0.001$). Perception of support strongly correlated to role commitment (r = 0.668, p = 0.009). Cost-benefit ratio calculated using supplies (office supplies, decorations, preceptor gifts), food (snacks for class), and human resources (staff educator support, nurse educator salary for development & implementation of training, & preceptor salary) costs (total $11,588.02) and compared to retention costs of a new graduate RN (NGRN) ($96,595) and determined a cost savings of $85,006.98 for just one NGRN retention.
Observable Measures	10 question pretest and posttest for online modules requiring minimum score of 90%. Contact hour evaluations completed by preceptors. Preceptor survey developed by Dibert & Goldenberg (1995) that included 35 items in 3 subscales (Commitment to preceptor role, perception of preceptor support, and perception of preceptor benefits and rewards) with items rated on a 1 to 6 Likert scale (1 = strongly disagree, 6 = strongly agree) which has demonstrated reliability and validity in previous studies.
Limitations	Online education module test scores not paired to individual learners. Learners responding to the preceptor survey not representative of the population who attended the preceptor class (n = 14 responses to survey [39% response rate], 71.4% had BSN; n = 36 attendees, 47% had BSN). Learners did not complete the preceptor survey prior to education, limiting comparisons. Online learning system limitations do not require learners to complete pretest prior to beginning modules, and allow learners to retake posttests without reviewing material again if initial score < 90%.
Evidence Level, Quality	V/A
Article Number	6
Author and Date	Cook, C. (2016).
Evidence Type	Expert opinion and review of evidence
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Important to provide a framework and general rules to preceptors to help them educate and evaluate preceptees. Use of the constructivist learning theory and "zone of proximal development" (ZPD) helps learners make sense of what they are learning by framing it within past experiences and building upon those. Assessment of the ZPD requires the educator to gradually withdraw support and not micromanage the preceptee in order to promote growth. The Model of Practical Skill Performance (MPSP) provides a framework for educators and learners to use in clinical learning. It was reported in one study as providing transparency to the invisible or intuitive aspects of skills and caring allowing educators to address these purposefully and the learners to learn and integrate these aspects in a timely manner. The 4A model uses 4 steps: anchoring the learner in current knowledge, adding additional knowledge, applying the skill, and reflecting on the takeaways for the learner to facilitate generalization of learning. Anchoring includes pre-reflection in order to assess the learner's current knowledge and skill level for the educator to build upon. The final step is often overlooked but vital to learners being able to apply things learned to other situations that may not be exactly the same. The Five Minute Preceptor (5MP) is a 5-step model based on experiential learning (Kolb's theory). 1) Get learner to take a stand (learner states where their knowledge level is at), 2) probe for evidence (anchoring, getting learner to think more), 3) educator shares general rules (maximum of 3), 4) reinforce the positives (give specific feedback on what learner did well), & 5) correct errors and misinterpretations (give specific feedback on where they need to improve and how to do that). Think aloud (TA), questioning, and giving feedback important skills for educators to develop clinical reasoning in learners. TA includes both the learner and educator talking through their actions and reasoning and should occur both concurrently (reflection in action) &

	retrospectively (reflection on action). Questioning appears to take longer than giving information, but allows for development of critical thinking leading to time savings in the long-term. It is important to use questions that allow for highlighting the learner's current knowledge as well as areas for growth to prevent embarrassment and shame in the learner. Allow adequate time for learners to think and formulate a response. Structure questions to cover 6 areas: clarifying questions, analytical questions, inspire reflection, support breakthrough thinking, challenge assumptions, and encourage ownership of solutions. Use of "what if" questions help elicit further depth and flexibility of thinking and ability to apply the current situation to future scenarios. Well-planned and implemented feedback allows learners to self-assess their own abilities, challenges, uncertainties and identify areas for improvement. Educators prime learners to expect motivational and developmental feedback as well as ask the learner for feedback on their role as preceptor. Priming can be useful to highlight areas the learner needs to work on and let them know the educator will be providing feedback on those specific areas after a patient interaction. Keep feedback limited to specific behavioral observations, rather than making assumptions about underlying motivations.
Observable Measures	N/A
Limitations	Lack of research to draw from relating to educating the clinical educator to be better able to support clinical reasoning growth of the clinical learner.
Evidence Level, Quality	V/A
Article Number	7
Author and Date	Dickison, P., Haerling, K. A., & Lasater, K. (2019).
Evidence Type	Expert opinion on the National Council of State Boards of Nursing-Clinical Judgment Model (NCSBN-CJM)
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	NCSBN-CJM developed from synthesis of literature on the cognitive theories of the construct of clinical judgment: Intuitive-Humanistic model, Dual Process Reasoning Theory, and Information Processing Model. Layer 0 (observation) contains 2 entities: client needs and clinical decisions. Layers 1-3 are cognitive operations. Layer 1 is clinical judgment. Layer 2 is an iterative process of forming, refining, and evaluating hypotheses. Layer 3 includes the operations needed for completion of each Layer 2 operation: recognize cues, analyze cues, prioritize hypotheses, generate solutions, take actions, & evaluate outcomes. Layer 4 is the environmental and individual contextual factors that influence the other layers. NCSBN-CJM can be used as an action model to create assessments based on scenarios (either full case studies or targeted scenarios), such as by using the operations in Layer 3 and delineating what actions are expected based on the cues and context given for each operation.
Observable Measures	N/A
Limitations	Expert review of the NCSBN-CJM and application of it; does not provide details on the development or research behind the CJM.
Evidence Level, Quality	V/A
Article Number	8
Author and Date	Dillard, N., Sideras, S., Ryan, M., Hodson Carlton, K., Lasater, K., & Siktberg, L. (2009).
Evidence Type	Program evaluation of faculty training workshop, student simulation evaluation and clinical application of learning from simulation with reflective evaluation.

Sample, Sample Size, Setting	*N* = 16 faculty across two schools of nursing *N* = 68 nursing students enrolled in a junior level adult health course Junior level adult health course in two schools of nursing
Findings that Help Answer the EBP Question	Faculty eval of workshop (1-5 Likert scale, 5 = strongly agree/expert): Organizational environment (*m* = 4.3), motivation of faculty (*m* = 4.7), educational program & change (*m* = 3.9), educational program (*m* = 4.3), instructor performance (*m* = 4.5). Student eval of learning objectives (Likert scale 1-4, 4 = totally got it): Recognize how body position affects breathing in HF patients (*m* = 3.81), value of fluid assessment in interpreting pt status in HF (*m* = 3.63), respond to pt anxiety and recognize impact on HTN & resp. distress (*m* = 3.72), describe importance of adherence to med tx plan in HF pts (*m* = 3.51), know how lab values can be used when caring for HF pts (*m* = 3.12), respond w/ appropriate communication level to teach pts complex info (*m* = 3.51). Reflective journaling by students allows faculty to see how the student is thinking and can be effective for evaluating clinical judgment. Providing effective, well-organized training on the LCJR enables more effective use of the tool, likelihood of the faculty to use the tool and value what it provides. Recommend putting clinical judgment framework language into each course evaluation & syllabus
Observable Measures	Faculty workshop outcomes via survey Student simulation learning evaluation via survey on objectives Student application of learning to clinical patient and evaluation of their reflective journal entry by faculty
Limitations	Length of faculty training workshop not provided, potentially difficult to replicate. Faculty workshop evaluation questionnaire modified which may diminish reported reliability of tool. Students assessed their own understanding of the simulation learning objectives on a Likert scale which could be biased. Time between simulation experience and clinical experience not noted which could affect application of learning by individual students.
Evidence Level, Quality	V/B
Article Number	9
Author and Date	Durkin, G. J. (2010)
Evidence Type	Non-research, organizational experience: Quality Improvement
Sample, Sample Size, Setting	New graduate nurses (n = 125) at Children's Hospital Boston
Findings that Help Answer the EBP Question	Tool developed to assess progress of an orientee across 8 competencies: clinical judgment, clinical inquiry, caring practices, response to diversity, advocacy/moral agency, facilitation of learning, collaboration, & systems thinking Evaluation progress tool accessible on the intranet via individual sites for each orientee, allowing transparent tracking Preceptor workshop taught use of the tool & practiced scoring for interrater reliability. Preceptors received support & education on units and at weekly forums. Time to complete tool weekly took about 20 minutes, supported by leadership team. Tool helped identify an orientee not meeting expectations; orientation experiences adjusted and orientee able to meet expectations within orientation timeline. Barriers include team precepting and who should complete evaluation (designated "lead" preceptor), communication between preceptors, & preceptor burnout. Able to reduce length of orientation from 22 to 20 weeks & anticipate orientee plateaus, thus providing support.
Observable Measures	Length of orientation per orientee Level of independence per orientee Evaluation of orientation program length based on aggregated results

Limitations	Tool created specifically for that organization based on their nursing model of care Complete tool and instructions for use not provided Identified some outcomes being measured but did not provide full evaluation of outcomes/results No cost/benefit analysis provided
Evidence Level, Quality	V/B
Article Number	10
Author and Date	Fenske, C. L., Harris, M. A., Aebersold, M. L., & Hartman, L. S. (2013)
Evidence Type	Comparative descriptive non-experimental design
Sample, Sample Size, Setting	*N* = 74 acute care RNs working in a large Midwestern community hospital Ages ranged from 21 to 64 years, (*M* = 36.2), acute care nursing experience 0 to 39 years (*M* = 6.3)
Findings that Help Answer the EBP Question	Self-assessment not statistically different between ≤ 1 year & > 1 year nursing experience in Noticing and Interpreting categories, but significant difference in Responding (≤ 1 year *M* = 12.73, > 1 year *M* = 13.73, *p* = 0.011) and Total score (≤ 1 year *M* = 28.41, > 1 year *M* = 30.20, *p* = 0.029). Actual Performance statistically different: Noticing (≤ 1 year *M* = 5.73, > 1 year *M* = 9.53, *p* = 0.000), Interpreting (≤ 1 year *M* = 3.86, > 1 year *M* = 6.17, *p* = 0.000), Responding (≤ 1 year *M* = 7.61, > 1 year *M* = 12.27, *p* = 0.000), Total score (≤ 1 year *M* = 17.20, > 1 year *M* = 27.97, *p* = 0.000) Differences by age groups (group 1 21-25 years, group 2 26-39 years, group 3 40-64 years) Self-assessment: Noticing (Group 1 *M* = 9.61, Group 2 *M* = 9.22, Group 3 *M* = 10.18; *p* = 0.032), Interpreting (Group 1 *M* = 6.22, Group 2 *M* = 6.04, Group 3 *M* = 6.57; *p* = 0.190), Responding (Group 1 *M* = 13.00, Group 2 *M* = 12.52, Group 3 *M* = 13.75; *p* = 0.031), Total scores (Group 1 *M* = 28.83, Group 2 *M* = 27.78, Group 3 *M* = 29.14; *p* = 0.017) Actual Performance: Noticing (Group 1 *M* = 5.91, Group 2 *M* = 6.83, Group 3 *M* = 8.75; *p* = 0.003), Interpreting (Group 1 *M* = 4.00, Group 2 *M* = 4.57, Group 3 *M* = 5.64; *p* = 0.008), Responding (Group 1 *M* = 8.04, Group 2 *M* = 8.52, Group 3 *M* = 11.50; *p* = 0.002), Total scores (Group 1 *M* = 17.96, Group 2 *M* = 19.91, Group 3 *M* = 25.89; *p* = 0.002)
Observable Measures	LCJR, using 9 of 11 dimensions under categories of Noticing (3 dimensions), Interpreting (2 dimensions), and Responding (4 dimensions). Scoring: 1 = beginning, 2 = developing, 3 = accomplished, and 4 = exemplary. Did not score on the two dimensions within Reflecting category due to inability to appropriately evaluate in the group setting.
Limitations	Findings not generalizable due to descriptive nature of study. LCJR had not been used this way previously, so no comparison available. Nurses not trained on use of the tool prior to use. Evaluations were done based on written responses to a worksheet after the nurse watched a video vignette rather than having actual observable actions by the nurse evaluated.
Evidence Level, Quality	III/A
Article Number	11
Author and Date	Hines, C. B., & Wood, F. G. (2016).
Evidence Type	Quasi-experimental study on introducing standardized clinical judgment scripts into clinical and simulation debriefings to improve clinical judgment skills of nursing students
Sample, Sample Size, Setting	53 senior baccalaureate nursing students 8-week synthesis course on complex critical care at a large public university in the SE U.S. that did 2 simulation scenarios & 6 clinical shifts

Findings that Help Answer the EBP Question	Introduction of standardized clinical judgment script into debriefings (as measured by independent raters scoring student performances on the LCJR) improved noticing (t = 5.109, df = 52, p = 0.000), interpreting (t = 5.463, df = 52, p = 0.000), and reflecting (t = 6.058, df = 52, p = 0.000), but decreased responding (t = 15.044, df = 52, p = 0.000), which is attributed to typical simulation responses as shown in their review of literature; literature review and student results demonstrate learning about responding domain occurs primarily in the debriefing. Student perceptions of clinical judgment skills indicated improvement on noticing, interpreting, responding (p = .000) and reflecting (p = .003). Clinical instructors felt students' reflection abilities improved with use of scripts (p = .002, Kappa = 0.814). Students survey on effectiveness of the script on fostering reflective thinking skills needed to develop clinical judgment on a 5-pt Likert scale: 1 = *Evaluate and analyze performance* (M = 4.42, SD = .57), 2 = *Analyze decision making* (M = 4.6, SD = .53), 3 = *Identify strengths and weaknesses* (M = 4.45, SD = .64), 4 = *Develop a plan for improvement* (M = 4.26, SD = .68), 5 = *Guide discussions* (M = 4.5, SD = .64) and 6 = *Was a useful tool* (M = 4.5, SD = .7).
Observable Measures	LCJR scores via two independent raters LCJR scores by students Modified LCJR (reflective portion) by clinical instructors Likert scale survey of students on effectiveness of standardized clinical judgment script (1 = strongly disagree, 5 = strongly agree)
Limitations	No control or comparison group—only compared between the two simulation experiences. The 2 simulation scenarios were very different. Homologous sample (96% women, 98% between 21-23 years old, 90% Caucasian)
Evidence Level, Quality	II/A
Article Number	12
Author and Date	Lasater, K. (2007).
Evidence Type	Exploratory mixed methods design
Sample, Sample Size, Setting	N = 39 3rd term junior nursing students enrolled in an adult med-surg clinical course were observed (n = 53 observations) over a 7-week time frame to develop and refine the Lasater Clinical Judgment Rubric (LCJR) Focus group of n = 8 students used at end of study to further test LCJR
Findings that Help Answer the EBP Question	The LCJR delineated Tanner's 4 phases into 11 dimensions. 1) *effective noticing*: (a)Focused observation, (b) recognizing deviations from expected patterns, (c) information seeking; 2) *effective interpreting*: (d) prioritizing data, (e) making sense of data; 3) *effective responding*: (f) calm, confident manner, (g) clear communication, (h) well-planned intervention/ flexibility, (i) being skillful; 4) *effective reflecting*: (j) evaluation/self-analysis, (k) commitment to improvement During weeks 4 & 5 scoring, clinical judgment skill score for students in primary nurse role (n = 26) (M = 22.98 pts, SD = 6.07) (maximum 44 points possible). No statistically significant variables found for day of the week, time of day, scenario order, team composition, size of small groups.
Observable Measures	Simulation experiences in groups of 12 students, where 1 is primary nurse with 2 team members, and the other 9 observe from debriefing room. Positions rotated throughout semester; not graded but verbal feedback & discussion provided; experiences lasted 2.5 hours each time. Students were scored during weeks 4 & 5 of study using rubric. Variables analyzed for influence: day of the week, time of day, scenario order, team composition, size of small groups. At the end of 7 weeks, a focus group of 8 students met for 90 minutes to test the concepts embedded in the LCJR.
Limitations	Small sample sizes for both qualitative focus group (which also had a bias towards non-traditional students) and quantitative measurements of students' performances in simulation.

	No clear description of sample demographics, tested only in simulation lab, no reliability or validity measures conducted or reported. Undertaken only with third-term juniors in a baccalaureate nursing program, limits generalizability.
Evidence Level, Quality	III/B
Article Number	13
Author and Date	Lasater, K. (2011).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Strategies to evaluate & foster clinical judgment development: formulating thought questions, reflection, self-evaluation. Students may not reach exemplary on the rubric by the end of the program, but it helps students identify life-long learning needed in nursing. Need for further research on how to develop nursing students' clinical judgment, impact of reflection on clinical judgment, how preceptors can bridge the gap between academe and practice. LCJR provides a common language for "students, nursing educators, and preceptors to discuss a complex but critical topic" (p. 87). Having a common language can assist in developing questions to elicit thought processes of the student (or orientee). Table 2 (p. 89) provides examples of higher level questions that can be used within each domain of the CJM/LCJR dimensions to elicit deeper thinking.
Observable Measures	N/A
Limitations	Extensive literature review included to back up opinion, however over half of sources over 5 years old at time of publishing.
Evidence Level, Quality	V/A
Article Number	14
Author and Date	Lasater, K., Nielsen, A. E., Stock, M., & Ostrogorsky, T. L. (2015).
Evidence Type	Retrospective analysis of a quasi-experimental intervention where new hire nurses (NHNs) wrote answers to case studies at start of orientation and were subsequently scored on the LCJR to develop a comprehensive and individualized orientation plan.
Sample, Sample Size, Setting	N = 202 NHNs with varying levels of experience hired into a large, tertiary-level medical center hospital in Oregon. Less than 1 year experience (n = 71), 1 to 2.9 years of experience (n = 41), 3 to 5.9 years (n = 40), at least 6 years of experience (n = 50). Associate degrees (n = 48), and baccalaureate degrees (n = 152), unknown (n = 2).
Findings that Help Answer the EBP Question	Newly hired RNs wrote answers to 3 of the case studies and then were scored on a modified LCJR. If any score indicated Beginning (0-3) or Developing (3.5-6), rather than Accomplished (6.5-9) or Exemplary (9.5-12), an orientation plan was created to focus on that dimension. 1) NHNs with < 1 yr. experience (n = 71) had lower total scores (μ = 11.70, SD = 2.37, range = 7 - 16) than NHNs with > 1 year of experience (μ = 13.01, SD = 2.18, range = 8 - 16) on total CJ ($p < .05$). NHNs with no experience (μ = 11.70, SD = 2.37) significantly lower than NHNs with 3-5.9 years (μ = 13.54, SD = 2.11) or ≥ 6 years of experience (μ = 12.96, SD = 2.09) ($p < .001$). 2) No difference in total CJ between ADN and BSN. One aspect, *interpreting*, was significant ($p < .05$), with ADN scores higher (μ = 3.48, SD = 0.68) than BSN scores (μ = 3.20, SD = 0.71). 3) 10 NHNs scored at beginning level in at least one dimension; 9 NHNs still employed at 9 months post-assessment; managers provided anecdotal evidence of progress: n = 1 exceeding expectations, n = 5 meeting expectations, n = 2 on probation, n = 1 whose manager had concerns but NHN not on probation.

Observable Measures	Analyzed total scores using LCJR on NHNs' case studies; individual case study scores & total scores over 3 case studies per NHN retained for analysis.
Limitations	Findings not necessarily generalizable to other hospitals/settings. A modified LCJR was used and was not tested for reliability, but provided some content validity as it was modified to specifically address expectations for NHNs at this institution: patient-family teaching, pathophysiology application, & medication administration. Did not address how many NHNs were in developing/beginning at start of orientation (how many required an orientation plan to focus on the lacking dimension of CJ).
Evidence Level, Quality	II/A
Article Number	15
Author and Date	Lusk Monagle, J., Lasater, K., Stoyles, S., & Dieckmann, N. (2018).
Evidence Type	Explanatory mixed methods, experimental, pretest/posttest design to determine if use of a structured reflection exercise using a clinical judgment framework would result in more practice-ready new graduate nurses (NGNs).
Sample, Sample Size, Setting	*N* = 74 NGNs employed for < 3 months from 3 community hospitals on East coast & 1 medical research center on West coast
Findings that Help Answer the EBP Question	Quantitative results: No differences between groups on HSRT scores or subscores. No correlation between CWLC high scores and LCJR high scores. No differences over the year-long study between groups in CWLC total scores. Both groups had increased CWLC subscore in *Being Valued* (*M* = 3.79(pre) to *M* = 3.96(post), *p* = .02). Work Satisfaction subscale of CWLC decreased more in control group (*M* = 4.21, pre; *M* = 3.76, post) than experimental group (*M* = 3.97, pre; *M* = 3.93, post) (*p* = .04). Qualitative themes: 1) enhancing communication: between themselves & patients, family members, other nurses, larger team 2) interprofessional support: trying to get med team's attention; advocating effectively, how to communicate with team 3) complexity of patients: noticed gaps in their knowledge/assessment of complex patients, anticipating issues before they happen 4) appreciating role of the nurse: did not emerge until 10-12 month reflection; lack of confidence as hindrance & opportunity for growth
Observable Measures	Health science reasoning test (HSRT): 33-item multiple choice test to measure ability to reason in health science curricula Clinical workplace learning culture survey (CWLC): 31-item, 5-pt Likert scale to determine perceptions of learning culture in clinical experiences LCJR as framework to reflect on practice Experimental group attended 3 sessions: 1) in-service session early in study (1-3 months) to teach use of LCJR for reflection; 2-3) 2 structured reflection sessions at 5-7 and 10-12 months after starting employment.
Limitations	Attrition rate of 32% from pretest to posttest limits generalizability. Focuses only on new graduate nurses, so may not be applicable to experienced nurses' experiences.
Evidence Level, Quality	I/A
Article Number	16
Author and Date	Miraglia, R. & Asselin, M. E. (2015).
Evidence Type	Literature review: Review of the literature on the LCJR and use as a tool with licensed nurses

Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Provides thorough review of evidence supporting use of LCJR by setting (academic, professional). Highlights how LCJR provides a common language for use between student and faculty, as well as promotes higher level questioning to develop clinical judgment. LCJR can be used for reflective practice. LCJR provides opportunity for the preceptor to focus beyond orienting to tasks and rather incorporate clinical judgment development into dialogue and activities with the orientee.
Observable Measures	N/A
Limitations	Rubrics not typically used in post-licensure settings Most literature on LCJR is in prelicensure settings LCJR developed to provide evaluation of clinical judgment within a single situation/context rather than an overall assessment of clinical judgment.
Evidence Level, Quality	V/A
Article Number	17
Author and Date	Modic, M. B. (2014).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Reflecting in action should occur simultaneously with the noticing, interpreting, and responding phases of clinical judgment and is an important self-monitoring technique the nurse should use. Role-modeling reflective behavior sets the expectation and permission to involve others in reflection, ask questions, and gain feedback. This includes modeling reflection on action—how the nurse reflects on the clinical day or events, such as during the commute home or when working out. Being deliberate in reflection is important for preceptors as the experienced nurse already reflects as needed and has it built into their practice, whereas new nurses do not necessarily do this habitually and/or spend much more time doing so as they go over every detail of the day. Types of reflective groups include critical event debriefing, informal shift debriefs, and nurse-to-nurse sharing of clinical narratives.
Observable Measures	N/A
Limitations	Article is part of an editorial series aimed at teaching educators how to develop skills in each of Tanner's clinical judgment domains; does not include an extensive literature review to support strategies proposed, though some evidence supplied.
Evidence Level, Quality	V/A
Article Number	18
Author and Date	Modic, M. B., & Schoessler, M. (2013a).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A

Findings that Help Answer the EBP Question	Overview of Tanner's CJM provided, focusing on the nonlinear process of clinical judgment. If a preceptor is concerned about an orientee's ability to notice, they need to determine where the orientee is struggling. To effectively notice, the nurse needs background knowledge, contextual knowledge, and knowledge of the patient.
Observable Measures	N/A
Limitations	Article is part of an editorial series aimed at teaching educators how to develop skills in each of Tanner's clinical judgment domains; does not include an extensive literature review to support strategies proposed, though some evidence supplied.
Evidence Level, Quality	V/A
Article Number	19
Author and Date	Modic, M. B., & Schoessler, M. (2013b).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Questions to help assess and develop an orientee's background knowledge, contextual knowledge, and knowledge of the patient provided. Useful strategies for educating preceptors on how to apply Tanner's model when orienting new nurses and assessing clinical judgment. Provides questions preceptors can ask as the orientee is planning the day and once the orientee is about to make rounds. Tips for designing experiences to help develop background knowledge also provided, especially the use of concept-based learning. Contextual knowledge is framed as the workplace culture/environment, such as required equipment in a hospital room or availability of safety measures that should be used in that institution for patients at fall risk. To develop knowledge of the particular patient, in-room shift hand-off is emphasized as a strategy for the orientee and preceptor to meet the patient together, compare off-going nurse's perception to their own, and establish a baseline knowledge that can be compared/contrasted later in the shift to show patient progress or deterioration.
Observable Measures	N/A
Limitations	Article is part of an editorial series aimed at teaching educators how to develop skills in each of Tanner's clinical judgment domains; does not include an extensive literature review to support strategies proposed, though some evidence supplied.
Evidence Level, Quality	V/A
Article Number	20
Author and Date	Modic, M. B., & Schoessler, M. (2014a).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	A detailed example of differences in interpretation (and associated responses, including further assessment) is provided to contrast a beginner and expert nurse's clinical judgment. Concept-based learning discussed again as a strategy to develop skills in interpretation, including posing conflicting cases and asking why questions. Case-based learning posed as critical to learning interpretation; it involves posing a case (i.e., case study) and taking the learner through the case, adding complexity, and posing questions and providing more information to get the learner actively involved in the case.

Observable Measures	N/A
Limitations	Article is part of an editorial series aimed at teaching educators how to develop skills in each of Tanner's clinical judgment domains; does not include an extensive literature review to support strategies proposed, though some evidence supplied.
Evidence Level, Quality	V/A
Article Number	21
Author and Date	Modic, M. B., & Schoessler, M. (2014b).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Skilled responding requires accounting for patient needs, skills and resources of the nurse, and timing, resources, and skills of the organization and team. Preceptors can assist orientees with recognizing and prioritizing what responses are appropriate and necessary by asking orientees prioritization questions throughout the shift. To teach responding, preceptors can reinforce knowledge the orientee already has (e.g., how to perform the skill), then walk the orientee through the entire process, including finding & utilizing resources within the organization, preparing the patient for the experience, and anticipating patient response. Asking "what if" questions and how the nurse might know if the intervention was successful starts the reflection on action process. The preceptor needs to provide debriefing frequently and find ways to help the orientee integrate "what needs to be done" with "how" and "why" in order to build conceptual knowledge. This clustering technique fosters learning and aids in retaining the information.
Observable Measures	N/A
Limitations	Article is part of an editorial series aimed at teaching educators how to develop skills in each of Tanner's clinical judgment domains; does not include an extensive literature review to support strategies proposed, though some evidence supplied.
Evidence Level, Quality	V/A
Article Number	22
Author and Date	Nielsen, A., Lasater, K., Stock, M. (2016).
Evidence Type	Qualitative semi-structured interviews with rigorous thematic analysis & triangulation to gain insight on experience of preceptors who had used the former assessment process and the new modified Lasater's Clinical Judgment Rubric (LCJR)
Sample, Sample Size, Setting	*N* = 7 experienced preceptors who had used both the former and new assessment processes with new graduate nurses (NGN) at a University hospital in Oregon
Findings that Help Answer the EBP Question	1) Need for a framework: Helpful for giving a baseline, compare it to NGN's experience, opens conversation 2) Framework supports Tanner's model: Noticing—using questions to increase NGN's observation skills Interpreting—Tying in previous experiences to make sense of current situation; identify priorities Responding—based on interpretation; nursing tasks vs. patient-centered care; lack of confidence can lead to blindly following orders; overconfidence can lead to poor decisions: need for accurate self-evaluation Reflection—learning from situations via guiding questions, role modeling 3) Value of framework for evaluating performance: Allows tracking of performance and goal setting; measurable progress and more meaningful than check-off lists for skills

	Preceptors have a close relationship with their orientee, allowing them better judgment of orientee's progress. Providing a clinical judgment framework assists preceptor in giving relevant feedback, judging progress more objectively, & support questions and discussion to promote development of clinical judgment.
Observable Measures	2 Focus groups met for 90 min ea. Semi-structured interview that reviewed the Tanner model prior to asking open-ended questions
Limitations	Sampling was purposive, but limits generalizability. All preceptors were females.
Evidence Level, Quality	III/A
Article Number	23
Author and Date	Schuelke, S., & Barnason, S. (2017).
Evidence Type	Integrative review (article states it is a systematic review but methodology, appraisal, and results align more with the intent of an integrative review)
Sample, Sample Size, Setting	*N* = 9 studies addressing interventions/strategies implemented by preceptors to promote critical thinking in new graduate nurses: *n* = 3 qualitative/descriptive, *n* = 2 quasi-experimental, *n* = 2 mixed methods, *n* = 1 descriptive correlational, & *n* = 1 pilot study (quasi-experimental)
Findings that Help Answer the EBP Question	Common theme identified preceptors need preparation on educational theory & practice. Feedback, evaluation, and facilitating critical thinking common topics in educating preceptors. EBP strategies across studies emphasized learning principles, providing input & feedback to new nurses, and educator involvement in the discussion, feedback, evaluation and critical thinking development. Preceptors need to master interactive communication due to new nurse need for input, feedback, and individualization & customization of orientation and educational interventions. The NES is pivotal to planning & implementing preceptor education & providing ongoing support. Tools used to develop/assess critical thinking skills in new graduate nurses must meet both preceptor and new grad needs and work within the busy clinical environment. Current best practices appear to be experiential learning, coaching, feedback, and evaluation.
Observable Measures	N/A
Limitations	Quality & design of studies included limited ability to determine validity/reliability of various tools or interventions studied. No common tool studied, and no common definition of critical thinking d/t complexity of the concept. Perceptions often used to evaluate critical thinking skills rather than objective measurement. Unable to determine which preceptor interventions are most beneficial to new grad nurses.
Evidence Level, Quality	V/A
Article Number	24
Author and Date	Steffan, K. & Goodin, H. (2010).
Evidence Type	Descriptive study using survey
Sample, Sample Size, Setting	*N* = 38 preceptors who attended the Preceptor Development Workshop from 3 system not-for-profit hospitals in central Ohio

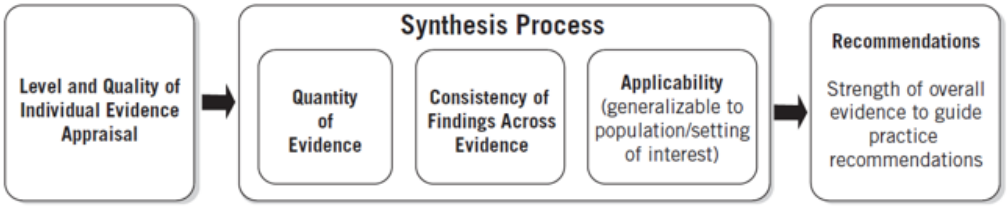
Findings that Help Answer the EBP Question	Use of RN Weekly Performance Summary & accompanying Benner guide by preceptors to evaluate nurse orientees weekly regarding progress towards competence overall evaluated positively by preceptors. *n* = 38 agreed use of tool would be helpful when evaluating orientees. *n* = 36 agreed use of Benner guide would be easy. *n* = 34 believe items can be rated objectively. *n* = 9 believed not all preceptors would rate the same.
Observable Measures	Survey sent to preceptors to evaluate perceptions of the new RN Weekly Performance Summary and Benner guide after introduction to them at a workshop for preceptors.
Limitations	Tool not in use prior to distributing survey; survey used after a preceptor class that instructed on the new tool and guide. Reliability and validity of tool and guide not tested. Small sample size; only 47% return rate of surveys. Preceptors by and large were new, limited to those who attended the Preceptor Development Workshop, and had 2-5 years of nursing experience on their unit and 1 year or less preceptor experience.
Evidence Level, Quality	III/B
Article Number	25
Author and Date	Stuedemann Fedko, A., & Thomas Dreifuerst, K. (2017).
Evidence Type	Correlational pilot study to determine if scores on LCJR correlated with demonstration of indicated nursing actions for a simulated scenario.
Sample, Sample Size, Setting	*N* = 22 senior level nursing students in a BSN program acting as primary nurse during simulation Midwest U.S. university nursing simulation lab
Findings that Help Answer the EBP Question	Observation of the simulation and debriefing was sufficient for scoring each student on the LCJR. Total LCJR mean score was 31.64 (out of 44 possible). Total scores moderately correlate to students' actions (r = .36, p = .04), indicating higher LCJR scores correlated to completing more of the indicated nursing actions. Individual domain scores in noticing (r = .13, p = .28), interpreting (r = .08, p = .35), and reflecting (r = .13, p = .27) did not correlate to indicated nursing actions. Responding scores on LCJR correlated moderately to performance of indicated actions (r = .43, p = .02), however, on average only 44% of all indicated actions were performed.
Observable Measures	LCJR and a nursing action form with indicated nursing actions for the simulated scenarios (developed by investigators)
Limitations	Underpowered (power analysis indicated *N* = 42 participants needed), reliability & validity of the nursing actions tool not established, and only 1 rater used. Simulations had a large number of indicated nursing actions which could confound results. May not transfer to clinical situations
Evidence Level, Quality	III/B
Article Number	26
Author and Date	Tanner, C. A. (2006).
Evidence Type	Integrative review
Sample, Sample Size, Setting	*N* = 191 English language research articles on clinical judgment published in nursing journals

Findings that Help Answer the EBP Question	Five conclusions from literature: 1) Clinical judgments more influenced by nurses' experience than objective data about current situation 2) Sound clinical judgment requires to some degree knowing current patient's typical pattern of responses & engagement with patient & patient's concerns 3) Clinical judgments influenced by context in which situation occurs and culture of the unit 4) Nurses use a variety of reasoning patterns alone & in combo: analytic processes, intuition, & narrative thinking 5) Reflection on practice triggered by breakdown in clinical judgment & is necessary for development of clinical knowledge & improvement in reasoning Proposed Clinical Judgment Model: Noticing → Interpreting → Responding → Reflecting
Observable Measures	N/A
Limitations	Studies reviewed have various theoretical perspectives, research methods, and foci. Clinical judgment is very complex and difficult to define and measure.
Evidence Level, Quality	V/A
Article Number	27
Author and Date	Victor-Chmil, J. (2013).
Evidence Type	Expert opinion
Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Critical thinking: cognitive process used for analyzing knowledge Clinical reasoning: cognitive & metacognitive processes used for analyzing knowledge in relation to a specific clinical situation or patient—applying critical thinking to specific clinical situations Clinical judgment: cognitive, psychomotor, & affective processes demonstrated through behaviors and actions Critical thinking is not discipline-specific, so any reliable and valid tool for measuring critical thinking could be applied to nursing Critical thinking and clinical judgment measurements not correlated No valid & reliable tool to measure clinical reasoning exists, but clinical reasoning can be developed through the use of decision trees, algorithms, thinking aloud, & reflective journaling Clinical judgment can be measured using the Lasater Clinical Judgment Rubric
Observable Measures	N/A
Limitations	Expert opinion based on limited literature review
Evidence Level, Quality	V/A
Article Number	28
Author and Date	Victor-Chmil, J. & Larew, C. (2011).
Evidence Type	Integrative review of psychometric properties of LCJR

Sample, Sample Size, Setting	N/A
Findings that Help Answer the EBP Question	Inter-rater reliability of LCJR generally reported in the literature as being good (> .80), but many studies do not adequately report methods, sample sizes, or are published in peer-reviewed journals which limit reliability of these reports. Also, some studies report a significant range of reliability scores, from as low as 0.402 interclass correlations coefficient for inter-rater reliability, to as high as 0.984. One study suggested expanding LCJR to include "patient safety" and "sentinel events" dimensions. Construct validity reported for entire tool at 0.95, and .88 for noticing, interpreting, responding, and .86 for reflecting. Individual dimensions (11) reported z scores ranging from 0.60 to 0.96 (good to very good). Another study reported content validity for LCJR stating it is capable of measuring all three Bloom's taxonomy learning domains and 6 of 8 AACN Baccalaureate Essentials. Other studies reviewed reported qualitative support of content validity of LCJR.
Observable Measures	Reviewed 65 sources for reports of reliability and validity of the LCJR.
Limitations	LCJR validity and reliability only reported (as of this article's publishing date) for simulation environments and nursing students. Many studies not published within peer-reviewed articles, so reported validity/reliability may not be trustworthy. While inter-rater reliability reported as very good, wide range of reliability reported so further research needed.
Evidence Level, Quality	V/A
Article Number	29
Author and Date	Wilburn, S., Jones, S., & Hamilton, B. K. (2018).
Evidence Type	Quasiexperimental pre/postintervention pilot study design
Sample, Sample Size, Setting	N = 15 preceptors from med-surg units 2 urban medical centers and 1 community hospital all faith-based and not-for-profit in SE U.S.
Findings that Help Answer the EBP Question	Nsg experience ranged from 1-36 years (μ = 7.47), preceptor age ranged from 20-60 years (μ = 34.13). n = 13 reported NNCS easy to read, n = 14 reported NNCS appropriate for evaluating NGNs, n = 15 reported instructions for use of NNCN clear and easy to follow. C-Scale scores improved from baseline (μ = 21.2, SD = 2.68) to postintervention (μ = 22.68, SD = 1.75) ($t(13) = -2.61$, $p < .05$). Preintervention: 33% of preceptors with prior preceptor training absolutely certain their evaluation of NGN correct compared to 13.3% of preceptors with no prior training ($\chi^2(1) = 1.727$, $p > .05$) Postintervention: 33% of the 7 from preintervention who felt fairly certain became certain and 13.3% became absolutely certain their evaluation of NGN correct ($\chi^2(2) = 3.233$, $p > .05$) While not all results statistically significant, some clinically significant implications that prior preceptor experience helpful in accurately evaluating NGNs/ orientees. Confidence improves with use of systematic approach/ evaluation tool.
Observable Measures	Norwegian Nurse Competence Scale (NNCS) to measure orientee competence: 46 items in 5 categories: professional leadership, planning & delivery of care, teaching functions, research utilization & nursing values, & professional awareness. Measurement scale not provided. Revised Confidence Scale (C-Scale) to measure preceptor confidence
Limitations	Small sample, no male preceptors, only med-surg nurses
Evidence Level, Quality	II/B

Appendix G

Synthesis Process and Recommendations Tool



Key Points:

- Evidence synthesis is best done through group discussion. All team members share their perspectives, and the team uses critical thinking to arrive at a judgment based on consensus during the synthesis process. The synthesis process involves both subjective and objective reasoning by the full EBP team. Through reasoning, the team:
  - Reviews the quality appraisal of the individual pieces of evidence
  - Assesses and assimilates consistencies in findings
  - Evaluates the meaning and relevance of the findings
  - Merges findings that may either enhance the team's knowledge or generate new insights, perspectives, and understandings
  - Highlights inconsistencies in findings
  - Makes recommendations based on the synthesis process
- When evidence includes multiple studies of Level I and Level II evidence, there is a similar population or setting of interest, and there is consistency across findings, EBP teams can have greater confidence in recommending a practice change. However, with a majority of Level II and Level III evidence, the team should proceed cautiously in making practice changes. In this instance, recommendation(s) typically include completing a pilot before deciding to implement a full-scale change.
- Generally, practice changes are not made on Level IV or Level V evidence alone. Nonetheless, teams have a variety of options for actions that include, but are not limited to: creating awareness campaigns, conducting informational and educational updates, monitoring evidence sources for new information, and designing research studies.
- The quality rating (see Appendix D) is used to appraise both individual quality of evidence and overall quality of evidence.

Table G1.

Synthesis Process and Overall Quality Ratings of Evidence

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
Level I ▪ Experimental study ▪ Randomized controlled trial (RCT) ▪ Systematic review of RCTs with or without meta-analysis ▪ Explanatory mixed method design that includes only a Level I quaNtitative study	1	A	LCJR used as a framework for new graduate nurses to reflect on their practice in a structured manner over the course of their first year of practice; this enhanced communication between the nurse and patients, other nurses, and team members, improved interprofessional support, and noticed gaps in assessment of more complex patients allowing them to close gaps and anticipate issues earlier (15).
Level II ▪ Quasi-experimental studies ▪ Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis ▪ Explanatory mixed method design that includes only a Level II quaNtitative study	3	A	Using standardized clinical judgment scripts during simulation debriefings with students improved students' abilities to notice, interpret, and reflect (11). A modified LCJR was used to score new hire nurses on their answers to case studies, identifying those who were beginning in at least one dimension and then developing an individualized orientation plan to address deficiencies (14). Use of the Norwegian Nurse Competence Scale (NNCS) by preceptors to evaluate orientee competence was viewed as easy to read and follow directions for use, and appropriate for evaluating competence of new graduate nurses; confidence in evaluating the orientee improved overall, including correctness of evaluation (29).

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
Level III ▪ Nonexperimental study ▪ Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta- analysis ▪ QuaLitative study or meta-synthesis ▪ Exploratory, convergent, or multiphasic mixed-methods studies ▪ Explanatory mixed method design that includes only a level III QuaNtitative study	8	A	Evidence continues to support Tanner's CJM with the addition of a sixth conclusion: Educational strategies to improve clinical judgment influence what a nurse brings to a situation (2). Preceptors struggled the most with providing feedback and objective evaluation to orientees, and identified need to learn how to teach critical thinking and prioritization (3). More experienced preceptors rated their orientees as less competent than the orientee did, which may indicate higher expectations for a novice nurse's competence level than less experienced preceptors (4). Nurses with less than one year of experience scored significantly lower on the LCJR than nurses with more than a year of experience, yet rated themselves much higher than their actual performance, indicating a discrepancy in perception of competence (10). LCJR describes each domain of clinical judgment by expanding to 11 dimensions and was useful to provide direct feedback on student performance in a simulated scenario (12). Preceptors found the LCJR useful for providing a baseline of the orientee's clinical judgment and for acting as a framework to provide feedback, track progress, and set goals (22). Use of a standardized weekly performance summary tool and guide based on Benner's stages by preceptors found to be easy to use and provide more objective evaluation of orientees (24). Student's demonstration of nursing actions during a simulated scenario were found to be moderately correlated to total and responding scores on the LCJR (25).
Level IV ▪ Opinions of respected authorities and/or reports of nationally recognized expert committees or consensus panels based on scientific evidence	0	N/A	

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
Level V ▪ Evidence obtained from literature or integrative reviews, quality improvement, program evaluation, financial evaluation, or case reports ▪ Opinion of nationally recognized expert(s) based on experiential evidence	17	A	Type and length of training on the LCJR, as well as stability of raters and cases, impact the LCJR's interrater reliability, though tool remains valid (1). Implementation of a preceptor training program should include robust recruitment methods, incentives to participate, and measurement of outcomes (5). Preceptors need a framework and general rules to help them educate and evaluate orientees (6). The NCSBN-CJM is based on three commonly used cognitive theories of the construct of clinical judgment and is described as a model for designing educational interventions to teach and evaluate clinical judgment (7). Providing well-organized training on the LCJR improves likelihood of successful adoption of the LCJR, and the LCJR was found to be useful in developing reflection skills in students (8). Implementing a new progress tracking tool for orientees included a preceptor workshop, on-unit support and weekly forums, supported time to complete the tool, and resulted in designating a lead preceptor due to team precepting model (9). The LCJR provides a common language to discuss clinical judgment and can assist in developing questions to elicit thought processes of the orientee (13). The LCJR provides opportunity for the preceptor to focus beyond orienting to tasks to incorporate clinical judgment development into dialogue and activities with the orientee (16). Reflection should be role-modeled and be done deliberately in-action and on-action by preceptors to teach orientees reflective practice (17). Tanner's CJM presents a nonlinear process of clinical judgment; preceptors need to be able to evaluate where in the process an orientee is struggling (18). Teaching preceptors how to assess and develop an orientee's background, contextual, and patient knowledge is crucial for setting a strong foundation for clinical judgment (19).

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
			Concept and case-based learning are helpful strategies for developing an orientee's interpretation abilities (20). Skilled responding requires accounting for patient needs, skills and resources of the nurse, and timing, resources, and skills of the organization and team (21). Preceptors need preparation on educational theory and practice, including teaching how to provide feedback, evaluation, and facilitate critical thinking (23). Clinical judgment is influenced by a nurse's experiences, knowledge of the patient, context, and occurs using a variety of reasoning patterns and reflection on practice; it encompasses the domains of noticing, interpreting, responding, and reflecting (26). Critical thinking, clinical reasoning, and clinical judgment are distinct concepts but are often used synonymously (27). Interrater reliability (IRR) of the LCJR varies in the literature, with most reporting good IRR, and construct and content validity are reported as good to very good (28).

Note. Numbers in parentheses correspond to article numbers in Appendix E, literature review table.

Table G2.

Recommendations, Fit, and Feasibility Based on Synthesis Process

Based on your synthesis, which of the following four pathways to translation represents the overall strength of the evidence?
❑ **Strong, compelling evidence, consistent results**: Solid indication for a practice change is indicated. ☒**Good and consistent evidence**: Consider pilot of change or further investigation. ❑ **Good but conflicting evidence**: No indication for practice change; consider further investigation for new evidence or develop a research study. ❑ **Little or no evidence**: No indication for practice change; consider further investigation for new evidence, develop a research study, or discontinue project.
*If you selected either the first option or the second option, **continue**. If not, **STOP**, translation is not indicated.*
Recommendations based on evidence synthesis and selected translation pathway
Due to the complex conceptual nature of clinical judgment, a higher level of body of evidence is not expected and moving forward with the selected EBP project as a pilot is recommended. The recommended tool, the LJCR, has a significant body of research supporting its use in similar populations and methods, and is supported by the organization. Implementing as a pilot is recommended because the plan for use of the LCJR has not been done before, though similar use was demonstrated in Lasater et al. (2015) and may need several iterations to determine the best path for the entire nursing department.
Consider the following as you examine fit:
Are the recommendations: ▪ Compatible with the unit/departmental/organizational cultural values or norms? • *Yes: Implementing evidence-based practice to improve evaluation of nurse orientees reflects the organization's cultural values which include excellence in care, teamwork, compassion, innovation, and stewardship (Mayo Clinic, n.d.).* ▪ Consistent with unit/departmental/organizational assumptions, structures, attitudes, beliefs, and/or practices? • *Yes, the DON's Nursing Professional Practice Model supports use of EBP and details the need for competent nurses who make sound clinical judgments (Mayo Clinic, 2014).* ▪ Consistent with the unit/departmental/organizational priorities? • *Yes, the recommendation to implement the LCJR is consistent with the charge provided when the organization requested my involvement to move the project forward.*
Consider the following as you examine feasibility:
▪ Can we do what they did in our work environment? • *Partially: For the pilot, resources are unavailable for more extensive education on the LCJR and its use. Also, the use of the LCJR as a progress review tool is slightly different from other published evidence due to stakeholder input.*

- Are the following supports available?
  - Resources
    - *Yes, resources including an online learning platform, print advertisement, electronic newsletters, classroom space, and NES time are available and supported.*
  - Funding
    - *Yes, funding is provided within each unit's operational budget. No further monetary resources are required for the implementation of the project.*
  - Approval from administration and clinical leaders
    - *Yes, EPD division nurse administrator and other departmental administrators supportive of project; approval gained by project mentor prior to project lead coming on to conduct project.*
  - Stakeholder support
    - *Yes, NESs have voiced significant support for the project; preceptors have also indicated in interviews their excitement for a better tool for reviewing progress.*
  - Is it likely that the recommendations can be implemented within the unit/department/organization?
    - *Yes, as a pilot study. While the ultimate goal of the department is to implement across the entire department and the organization's health system, a pilot is necessary first to determine how to best continue and sustain the change within a larger setting.*

Appendix H

Lasater's Clinical Judgment Rubric

Effective NOTICING involves:	**Exemplary**	**Accomplished**	**Developing**	**Beginning**
Focused Observation	Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	Regularly observes/monitors a variety of data, including both subjective and objective; most useful information is noticed, may miss the most subtle signs	Attempts to monitor a variety of subjective and objective data, but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information	Confused by the clinical situation and the amount/type of data; observation is not organized and important data is missed, and/or assessment errors are made
Recognizing Deviations from Expected Patterns	Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment	Recognizes most obvious patterns and deviations in data and uses these to continually assess	Identifies obvious patterns and deviations, missing some important information; unsure how to continue the assessment	Focuses on one thing at a time and misses most patterns/deviations from expectations; misses opportunities to refine the assessment
Information Seeking	Assertively seeks information to plan intervention: carefully collects useful subjective data from observing the client and from interacting with the client and family	Actively seeks subjective information about the client's situation from the client and family to support planning interventions; occasionally does not pursue important leads	Makes limited efforts to seek additional information from the client/family; often seems not to know what information to seek and/or pursues unrelated Information	Is ineffective in seeking information; relies mostly on objective data; has difficulty interacting with the client and family and fails to collect important subjective data

Effective INTERPRETING involves:	Exemplary	Accomplished	Developing	Beginning
Prioritizing Data	Focuses on the most relevant and important data useful for explaining the client's condition	Generally focuses on the most important data and seeks further relevant information, but also may try to attend to less pertinent data	Makes an effort to prioritize data and focus on the most important, but also attends to less relevant/useful data	Has difficulty focusing and appears not to know which data are most important to the diagnosis; attempts to attend to all available data
Making Sense of Data	Even when facing complex, conflicting or confusing data, is able to (1) note and make sense of patterns in the client's data, (2) compare these with known patterns (from the nursing knowledge base, research, personal experience, and intuition), and (3) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the client's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or complicated cases where it is appropriate to seek the guidance of a specialist or more experienced nurse	In simple or common/familiar situations, is able to compare the client's data patterns with those known and to develop/explain intervention plans; has difficulty, however, with even moderately difficult data/situations that are within the expectations for students, inappropriately requires advice or assistance	Even in simple of familiar/common situations has difficulty interpreting or making sense of data; has trouble distinguishing among competing explanations and appropriate interventions, requiring assistance both in diagnosing the problem and in developing an intervention

Effective RESPONDING involves:	Exemplary	Accomplished	Developing	Beginning
Calm, Confident Manner	Assumes responsibility: delegates team assignments, assess the client and reassures them and their families	Generally displays leadership and confidence, and is able to control/calm most situations; may show stress in particularly difficult or complex situations	Is tentative in the leader's role; reassures clients/families in routine and relatively simple situations, but becomes stressed and disorganized easily	Except in simple and routine situations, is stressed and disorganized, lacks control, making clients and families anxious/less able to cooperate
Clear Communication	Communicates effectively; explains interventions; calms/reassures clients and families; directs and involves team members, explaining and giving directions; checks for understanding	Generally communicates well; explains carefully to clients, gives clear directions to team; could be more effective in establishing rapport	Shows some communication ability (e.g., giving directions); communication with clients/families/team members is only partly successful; displays caring but not competence	Has difficulty communicating; explanations are confusing, directions are unclear or contradictory, and clients/families are made confused/anxious, not reassured
Well-Planned Intervention/ Flexibility	Interventions are tailored for the individual client; monitors client progress closely and is able to adjust treatment as indicated by the client response	Develops interventions based on relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions based on the most obvious data; monitors progress, but is unable to make adjustments based on the patient response	Focuses on developing a single intervention addressing a likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur
Being Skillful	Shows mastery of necessary nursing skills	Displays proficiency in the use of most nursing skills; could improve speed or accuracy	Is hesitant or ineffective in utilizing nursing skills	Is unable to select and/or perform the nursing skills

Effective REFLECTING involves:	Exemplary	Accomplished	Developing	Beginning
Evaluation/Self-Analysis	Independently evaluates/ analyzes personal clinical performance, noting decision points, elaborating alternatives and accurately evaluating choices against alternatives	Evaluates/analyzes personal clinical performance with minimal prompting, primarily major events/decisions; key decision points are identified and alternatives are considered	Even when prompted, briefly verbalizes the most obvious evaluations; has difficulty imagining alternative choices; is self-protective in evaluating personal choices	Even prompted evaluations are brief, cursory, and not used to improve performance; justifies personal decisions/choices without evaluating them
Commitment to Improvement	Demonstrates commitment to ongoing improvement: reflects on and critically evaluates nursing experiences; accurately identifies strengths/ weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance: reflects on and evaluates experiences; identifies strengths/ weaknesses; could be more systematic in evaluating weaknesses	Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and improve performance but tends to state the obvious, and needs external evaluation	Appears uninterested in improving performance or unable to do so; rarely reflects; is uncritical of him/herself, or overly critical (given level of development); is unable to see flaws or need for improvement

Appendix I

Permission to Use the Lasater Clinical Judgment Rubric

From: Kathie Lasater <lasaterk@ohsu.edu>
Sent: Wednesday, January 23, 2019 2:53 PM
To: Lazzara, Lydia K <Lydia.Lazzara@winona.edu>
Subject: RE: Request to Use the Lasater Clinical Judgment Rubric for DNP Project

Hi Lydia,

Thanks for your email--I love your project idea. I'm including a publication that came directly from working with our university hospital, using a modified LCJR they developed--not with new grads although they were probably the primary focus and this study has led to changes in orientation.

There is no cost for using the LCJR; if you want to modify it, it's fine with me as long as you give appropriate attribution, e.g., "Adapted from..." Usually, I hear from folks when they want to use the rubric for a new project. In part, this is self-protective for you because I've heard hundreds of uses for the rubric over the past 11 years so can steer you away from things that have already been tried. Generally, if you are using the LCJR in a responsible way, I'm not going to say no. Here is a blurb I usually send with permission that gives some general guidelines:

"Thank you for your interest in the Lasater Clinical Judgment Rubric (LCJR). You have my permission to use the tool for your project. I ask that you (1) cite it correctly, and (2) send me a paragraph or two to let me know a bit about your project when you've completed it, including how you used the LCJR. In this way, I can help guide others who may wish to use it. Please let me know if it would be helpful to have an electronic copy.

You should also be aware that the LCJR describes four aspects of the Tanner Model of Clinical Judgment—Noticing, Interpreting, Responding, and Reflecting—and as such, does not measure clinical judgment because clinical judgment involves much of what the individual student/nurse brings to the unique patient situation (see Tanner, 2006 article). We know there are many other factors that impact clinical judgment in the moment, many of which are impacted by the context of care and the needs of the particular patient.

The LCJR was designed as an instrument to describe the trajectory of students' clinical judgment development over the length of their program. The purposes were to offer a common language between students, faculty, and preceptors in order to talk about students' thinking and to serve as a help for offering formative guidance and feedback (See Lasater, 2007; Lasater, 2011). For measurement purposes, the rubric appears to be most useful with multiple opportunities for clinical judgment vs. one point/patient in time."

Good luck and let me know if I can be of help,
Kathie

Kathie Lasater, EdD, RN, ANEF, FAAN
Professor (Retired), OHSU School of Nursing
3455 SW Veterans' Hospital Rd., SN-4S
Portland, OR 97239; (503)494-8325

Kathie Lasater is also Assistant Editor of Nurse Education Today
http://www.nurseeducationtoday.com

Appendix J

Structure, Process, and Outcome Indicators for Use of Lasater's Clinical Judgment Rubric

Structure
What human resources support the implementation of the LCJR?
Nurse Administrators NESs Nurse Managers Preceptors Orientees Redcap survey builder Administrative Assistant Education Technology NES Administrative Assistants for NESs
What physical resources support the implementation of the LCJR?
Classrooms Paper and printers Computers Workspaces
What training is in place to support the implementation of the LCJR?
Semiannual preceptor workshops Preceptor committees One on one preceptor training with NES Initial preceptor course One on one training of NESs My Learning modules for preceptors & NESs
What technology is in place to support the implementation of the LCJR?
Intranet My Nursing My Learning Captivate software Vengage software RedCap Survey tool
Process
How are we implementing the LCJR?
Educate preceptors and NESs Set expectation for use in all practice areas Offer flexible template/tool for NES modification to individual unit practice
What is the process for using the LCJR?
Use by NES during progress reviews Use by preceptor prior to progress reviews

Process (continued)
How will people know about the implementation of the LCJR?
Unit-based newsletters Insite article Preceptor workshops Initial preceptor course
How will people know how to use the LCJR?
One on one training of preceptors and NESs Preceptor workshops Initial preceptor course My Learning modules
Outcome
How are we measuring our outcomes from using the LCJR?
NES and Preceptor Pre/Post Pilot Survey NES focus group post-pilot Preceptor interviews post-pilot

Appendix K

Online Education Module

Learning Objectives

By the end of the module, the learner will be able to:

- State the four clinical judgment model domains.
- Describe how the Lasater clinical judgment rubric (LCJR) tool should be used to evaluate a nurse orientee's clinical judgment.
- Evaluate an orientee using the LCJR based on a written case study.

Evaluation of Learning Questions

1. Select appropriate interventions to develop the prioritization dimension (select all that apply):
    a. Review the signs and symptoms of sepsis.
    b. Complete stacking exercise with orientee.
    c. Compare orientee and preceptor rationale for prioritization choices.
    d. Ask the orientee to identify appropriate interventions to treat sepsis and acute pain.
    e. Ask the orientee to apply a theoretical framework (e.g., Maslow's hierarchy of needs or Airway, Breathing, Circulation) to the current patient scenarios.
        - Answer: B, C, & E
2. List the four clinical judgment domains.
    - Answer: noticing, interpreting, responding, reflecting
3. True/False. The LCJR can be used to evaluate an orientee's clinical judgment over 3 consecutive shifts.
    - Answer: False
4. True/False. It is normal for the orientee to regress to a lower level of clinical judgment on the LCJR as they progress through orientation and encounter more complex patient care scenarios.
    - Answer: True
5. To score an orientee on the LCJR, I should (select all that apply):
    a. Start in the level (e.g., Accomplished) where I think they should be, then go up or down from there.
    b. Start at Beginning and work my way up.
    c. Choose the lower level if they do not meet all the criteria in the upper level.
        - Answer: B & C

Practice Case Scenario for Scoring on LCJR

- Your patient is Mary Jane. She is 56 years old and has a history of smoking, hypertension, and chronic low back pain. She was diagnosed with pneumonia based on her CXR. The CXR showed some concerning lesions, so the provider ordered a CT scan with IV contrast to evaluate the lesions.
- Mary Jane just finished the CT scan and the orientee is assessing her because the Technologist mentioned Mary Jane appears to not be doing very well. The orientee tells you she isn't hearing any lung sounds in Mary Jane's left lobe, and that her respiratory rate is 24 and on 2L/NC her SaO2 is only 89%. She also said Mary Jane is complaining of pain in her mid to low back of 6/10. When the orientee asked Mary Jane if the pain was related to her chronic low back pain, the patient hesitated and then stated that it might have been how she had to lay for the CT or how she slept last night. The orientee reassures Mary Jane that can happen.
- She offers to help Mary Jane reposition herself and suggests adding more pillows under the left side may help with the pain, as well as raising the head of the bed to make it easier to breathe and relieve some pressure on her back.
- After repositioning Mary Jane, the orientee notices that her SaO2 has dropped now to 86%. Upon counting respirations, she notices they have increased to 28 and instead of breathing easier, Mary Jane is taking rapid, shallow breaths and is complaining of 8/10 pain in that spot on her back. The orientee is starting to look panicked and unsure of herself and is unable to answer Mary Jane's question about why she is feeling worse instead of better.
- You step in to help, as you suspect Mary Jane may have a pneumothorax and need to intervene right away.

Please score the orientee on the LCJR through the first three domains (Noticing, Interpreting, and Responding) on the following slides.

Evaluating the Reflecting Domain

- Preceptor: "Let's debrief from what just happened. Can you summarize for me what was going on with the patient after her CT?"
- Orientee: "The patient was having a lot of pain and not breathing very well, so I thought trying to reposition her to help relieve her pain would help her breathe better, too."
- Preceptor: "What did you think about her absent lung sound in her left lobe?"
- Orientee: "Oh yeah, I noticed that, but thought it was just from the pneumonia making her lung sounds so dim I couldn't hear them."
- Preceptor: "In retrospect, is there anything you would have done differently?"
- Orientee: "Yeah, I guess I would ask you or another nurse to listen to her lungs, too."

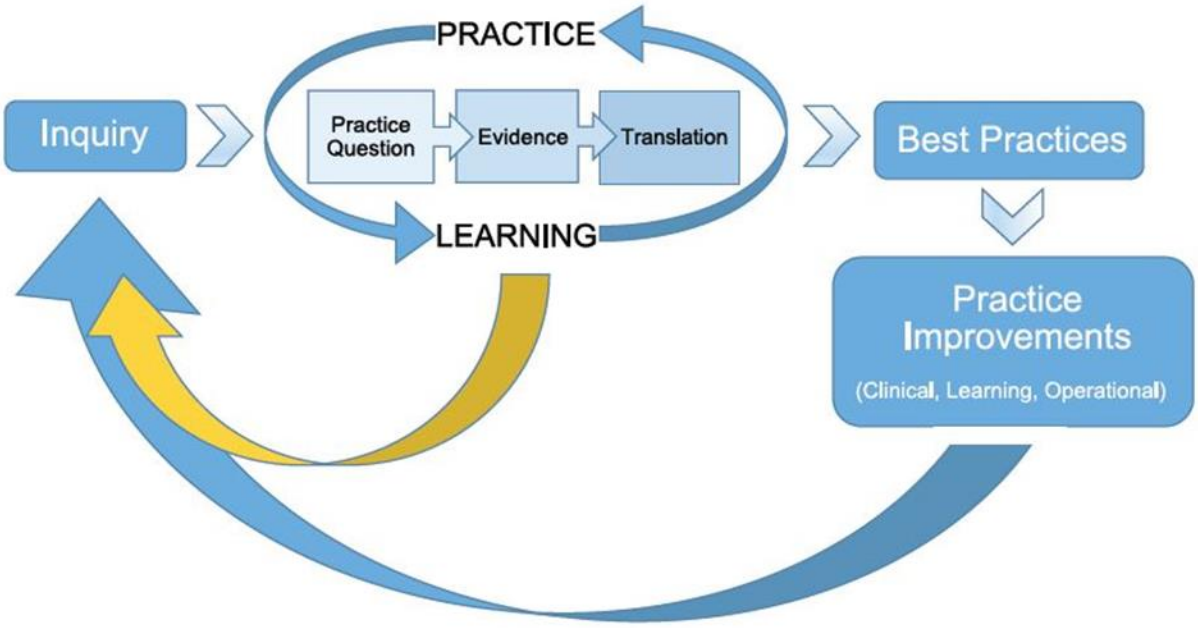
Appendix L

Teaching Plan for Preceptor Training

Purpose: *To provide preceptors with the information necessary to evaluate nurse orientees using the Lasater Clinical Judgment Rubric (LCJR).* **Goal:** *Using the LCJR, the preceptor will demonstrate the ability to correctly evaluate a nurse orientee's clinical judgment.*					
Objectives & Subobjectives	**Content Outline**	**Method of Instruction**	**Time Allotted (in min.)**	**Resources**	**Method of Evaluation**
1. The preceptor will identify personal reasons to implement the LCJR.	Rationale for project	Discussion	10	PowerPoint	Question and answer
2. The preceptor will name the four domains of clinical judgment.	Review Tanner's clinical judgment model.	Lecture, questioning	5	PowerPoint/handout	Question and answer
3. The preceptor will state how to determine if an orientee is beginning, developing, accomplished or exemplary in one dimension of the LCJR.	Review the LCJR and how to use appropriately.	Lecture, questioning	10	PowerPoint/handout	Question and answer
4. The preceptor will evaluate an orientee's clinical judgment using the LCJR in all 11 dimensions correctly ± 1 level.	Provide scenarios preceptors encounter with orientees	Case studies	60	PowerPoint with scenarios, Handouts of LCJR & scenarios	Review results as a group
5. The preceptor will identify how the LCJR will be operationalized on their unit.	Provide list of scenarios preceptors should complete the LCJR on their orientee	Discussion	10	Handout	Question and answer
6. The preceptor will express any questions or concerns regarding use of LCJR with their orientees.	Summarize FAQs and explore additional concerns	Discussion	20	N/A	Question and answer

7. The preceptor will identify resources available to them during the pilot.	Provide business card(s)	Discussion	5	Business card(s), e-mail with list of electronic resources & contact information	Follow-up email

Appendix M
The Johns Hopkins Nursing Evidence-Based Model and Steps



PRACTICE QUESTION

Step 1: Recruit interprofessional team
Step 2: Define the problem
Step 3: Develop and refine the EBP question
Step 4: Identify stakeholders
Step 5: Determine responsibility for project leadership
Step 6: Schedule team meetings

EVIDENCE

Step 7: Conduct internal and external search for evidence
Step 8: Appraise the level and quality of each piece of evidence
Step 9: Summarize the individual evidence
Step 10: Synthesize overall strength and quality of evidence
Step 11: Develop recommendations for change based on evidence synthesis
- Strong, compelling evidence, consistent results
- Good evidence, consistent results
- Good evidence, conflicting results
- Insufficient or absent evidence

TRANSLATION

Step 12: Determine fit, feasibility, and appropriateness of recommendation(s) for translation path
Step 13: Create action plan
Step 14: Secure support and resources to implement action plan
Step 15: Implement action plan
Step 16: Evaluate outcomes
Step 17: Report outcomes to stakeholders
Step 18: Identify next steps
Step 19: Disseminate findings

Appendix N

Implementation Strategies by Stage of Change in Lewin's Change Model

Unfreezing	Moving	Refreezing[a]
• Identify the problem • Determine the evidence • Share evidence & discuss solutions with stakeholders • Provide update to larger stakeholder groups (e.g., EPD division, PACE committee) • Convene focus groups & individual interviews to garner feedback on proposed solution & bolster support • Survey NES, preceptor, and orientee stakeholder groups to determine scope of problem • Utilize pilot unit newsletters to announce the coming pilot project • Emphasize benefits of using the LCJR, including common language & ability to more objectively evaluate the orientee	• Place posters on pilot units describing Tanner's (2006) model and the LCJR dimensions & use of the tool; provide the "what" and the "why" • Develop My Learning module for NESs and preceptors, teaching the tool and application of it in progress reviews/nursing orientation • Educate pilot unit NESs and preceptors face-to-face on the tool & application of it prior to implementing tool • Emphasize benefits of using the LCJR, including common language & ability to more objectively evaluate the orientee • Identify unit champions and provide further one-on-one education prior to starting pilot • Provide just-in-time training and assistance to the pilot units throughout the pilot, such as "lunch and learns" or the ability to page a project expert with questions	• My Learning training module on the tool is required for all preceptors within three months of implementation across the department • My Learning training module required for all new preceptors prior to precepting • Preceptor workshops include learning sessions with new tool for first year of implementation • Preceptor training class updated to include teaching of the tool and methods to apply to practice

[a]Refreezing not within the scope of the current project. Implementation strategies in this phase of the change process will be recommended to the organization to effect stable change and proper integration into the department of nursing's culture.

Appendix O

JHNEBP Action Planning Tool

Table O1.

Action Planning for Successful Translation

1. Complete the following activities to ensure successful translation:		
☒Secure a project leader: *Lydia Lazzara, DNP student* ☒Identify change champions: *Project mentor, EPD division Nurse Administrator* ☒Consider whether translation activities require different or additional members: *Pilot unit NESs, preceptors; Education Technology NES and support staff for online module* ☒Schedule time to complete milestones. ☒Identify critical milestones and related tasks: *See below.* ☒Identify observable pre or post measures: *See below.*		
2. Identify barriers to the success of the change, and then identify strengths that can be leveraged to overcome barriers.		
Barriers	Resources or Strengths	Plan to Overcome Barriers by Leveraging Strengths as Appropriate
Multiple practice areas with different practice needs	One department of nursing and organizational commitment to standardization of practice based on EBP; LCJR not specific to a practice area and designed for use with nurses	Project leader will promote to stakeholders the flexibility and general applicability of the LCJR and include these pros in educational and promotional materials.
Overeager NES group leading to scope creep and desire to implement tool beyond its researched use.	Project leader has strong leadership skills to manage competing interests and priorities; project advisor provides valuable consultations regarding appropriateness of scope	Project leader will clearly delineate scope of project and evidence-supported use of LCJR to stakeholders. Project advisor will be consulted by project leader as needed to provide direction on scope of project.
LCJR is a complex tool requiring training for proper use and takes time to fill out, which may deter preceptors.	LCJR provides a common language and a more objective evaluation form. Education on the tool. Nursing leadership support the use of the LCJR to evaluate orientees. Preceptor frustration with current process.	Educational and promotional materials will highlight the positive aspects of the LCJR and negative aspects of the current process. An online education module will be available to preceptors and they will receive an in-person class providing reinforcement on the use of the LCJR. NESs will be trained in the use of the LCJR and be available as a unit resource for preceptors.
Protected off-unit time for preceptors to attend educational session on the LCJR or complete the online module may not be allowed due to budget constraints.	Nursing leadership support for preceptor forums provides off-unit time for education session. Some units already had preceptor forums scheduled.	Online module will be available several weeks prior to scheduled in-person sessions to allow preceptors time to complete on their own. Education sessions will utilize time within scheduled preceptor forums already supported by nursing leadership. One-on-one training of preceptors unable to attend sessions could be completed by unit NES and/or project leader.

Table O1 (continued).

3. Consider whether or how this change will affect the following:		
☐Electronic health record	☒Workflow: *Preceptors will need to find time during the shift to complete the LCJR on their orientee*	☒Policies and/or procedures: *While outside the scope of the current pilot project, if implemented across the department, policies will need to be written regarding use as the standardized progress review tool and performance criteria of orientees required to practice independently.*

4. Confirm support and/or availability of funds to cover expenses. ***(Check all that apply)***	
☒Personnel costs	☒Education or further training
☒Supplies/equipment	☒Content or external experts
☒Technology	☒Dissemination costs (conference costs, travel)
☒Photocopying	☐Other: N/A

Table O2.

Critical Milestones and Related Tasks

5. Identify critical milestones and related tasks:									
	Create Online Education Module	Train NESs on LCJR and How to be a Resource	Survey Preceptors and NESs	Educate Preceptors	Implement LCJR on Pilot Units	Conduct Interviews with Preceptors from Each Unit	Conduct NES Focus Group on LCJR	Survey Preceptors and NESs at 3 Months	Analyze Results of Interviews, Focus Group, and Surveys
Tasks	Write learning outcomes for online module	Develop objectives for NES training	Determine what desired project outcomes are	Develop learning objectives and class agenda with pilot NESs	Determine implementation schedule for each unit based on unit's scheduled preceptor classes and next orientee cohort	Project lead to develop interview questions based on project outcome measures and literature evidence	NESs to notify project lead when the first official progress review on each unit using the LCJR has been conducted	Project lead to determine timeline for each unit's post-survey based on individual implementation schedule	Project lead to work with project mentor to analyze interviews and focus group responses for themes
	Create storyboard for module in PowerPoint®	Schedule meeting time with pilot NESs	Search evidence for surveys that already measure project outcomes	NESs to schedule preceptor forums	Develop unit-specific advertising for the pilot roll-out with dates and resources.	NESs to provide project lead with names and contacts of preceptors who used the LCJR for progress reviews	Project lead to develop focus group questions or revise preceptor interview questions to be relevant to NESs	Project lead to send out repeat survey to pilot unit preceptors and NESs 3 months after the unit implemented the LCJR	Project lead and project mentor to download survey responses from RedCap to an Excel spreadsheet

Table O2 (continued).

5. Identify critical milestones and related tasks:									
	Create Online Education Module	Train NESs on LCJR and How to be a Resource	Survey Preceptors and NESs	Educate Preceptors	Implement LCJR on Pilot Units	Conduct Interviews with Preceptors from Each Unit	Conduct NES Focus Group on LCJR	Survey Preceptors and NESs at 3 Months	Analyze Results of Interviews, Focus Group, and Surveys
Tasks	Write quiz items to test learner's achievement of outcomes	Write agenda for meeting	Write survey questions for preceptors and NESs to measure project outcomes	Preceptors to schedule a forum to attend (unit-based)	Post advertising on units and send via emails or unit newsletters	Project lead to contact preceptors and schedule interviews	Project lead to schedule the focus group at a time convenient to all pilot NESs	Reminder emails to be sent out one week and two weeks after initial email	Excel spreadsheet to be provided to statistician to assist project lead in conducting statistical analyses of data
	Submit storyboard to Education Technology NES to create in Cengage®	Email NESs regarding meeting agenda	Request feedback on each survey (preceptor and NES) from an expert panel of preceptors and expert panel of NESs	Ensure case studies ready for class (NESs and project lead)	Provide face-to-face contact with preceptors after classes to ensure readiness to implement (NESs and project lead)	Project mentor to secure a private, quiet location for each preceptor interview ahead of scheduled time	Project mentor to secure a private, quiet location for the focus group ahead of scheduled time		Unmatched post-surveys to be analyzed separately from matched survey pairs

Table O2 (continued).

5. Identify critical milestones and related tasks:									
	Create Online Education Module	Train NESs on LCJR and How to be a Resource	Survey Preceptors and NESs	Educate Preceptors	Implement LCJR on Pilot Units	Conduct Interviews with Preceptors from Each Unit	Conduct NES Focus Group on LCJR	Survey Preceptors and NESs at 3 Months	Analyze Results of Interviews, Focus Group, and Surveys
Tasks	Record voice-over for online module	NESs begin to create case studies relevant to their practice for use in preceptor class	Incorporate feedback into revisions of surveys	Determine what educational materials needed for class	Provide support to preceptors to complete the LCJR on their orientee appropriately (unit leadership)	Project lead to interview each preceptor and take detailed notes on preceptor responses	Project lead to conduct focus group with NESs and take detailed notes on responses		Project lead to determine conclusions based on data analyses
	Review and revise online module and quiz with Education Technology NES until complete	Project lead to meet with NESs and train on LCJR and assist in further development of case studies	Consult expert in organization's Survey Research Center on survey questions	Print educational materials ahead of each class	Provide just-in-time training on units as needed/ requested by preceptors (project lead, NESs)				Project lead to confirm conclusions with statistician and project mentor to ensure appropriate-ness
	Post online education module to My Learning	Schedule and conduct follow-up meetings with pilot NESs ahead of preceptor training as needed	Make final revisions based on expert feedback	Email preceptors with instructions to complete online learning module ahead of class	Send out biweekly emails during implementation with tips and resources for using LCJR				Disseminate findings from pilot to all stakeholders

Table O2 (continued).

5. Identify critical milestones and related tasks:									
	Create Online Education Module	Train NESs on LCJR and How to be a Resource	Survey Preceptors and NESs	Educate Preceptors	Implement LCJR on Pilot Units	Conduct Interviews with Preceptors from Each Unit	Conduct NES Focus Group on LCJR	Survey Preceptors and NESs at 3 Months	Analyze Results of Interviews, Focus Group, and Surveys
Tasks	Make module searchable for pilot unit preceptors		Create surveys in RedCap. Ensure preceptor survey created with unique identifiers to aid in matching responses in post-survey	Preceptors to complete online module prior to class					
			Request email list of preceptors for each unit from pilot NESs	Conduct classes for each pilot unit (pilot NESs and project lead)					
			Send surveys to pilot NESs and preceptors						
			Send reminder emails to NESs and preceptors to complete one week after initial request						

Appendix P

Mayo Institutional Review Board Letter

MAYO CLINIC

Memo

Date: 1/23/2020

From: Mayo Clinic Institutional Review Board

Re: *Progress Review Improvement Project, Lydia Lazzara, M.S., R.N.*

To: *Michelle Coy,* ***MSN, RN-BC, CCRN-K***

The Mayo Clinic Institutional Review Board (IRB) acknowledges that based on the responses submitted for this new activity through the Mayo Clinic Quality Improvement Wizard tool, and in accordance with the Code of Federal Regulations, 45 CFR 46.102, the above noted activity does not require IRB review.

Other Federal, State and local laws and/or regulations may apply to the activity. This activity may be reconsidered for submission to the IRB if any changes are made.

The Project Leader is responsible for the accuracy and reliability of the information submitted through the Quality Improvement Wizard tool, for following all applicable Federal, State and local laws and/or regulations, and is also responsible for submitting research studies to the IRB when required.

Retain either a paper or electronic copy for your records.

Your responses to the Quality Improvement Wizard, listed below, indicate that the project is a Quality Improvement activity not requiring IRB review.

1. Does the project involve the prospective evaluation of a drug, device or clinical procedure that is not currently approved by the FDA for general use (including "off-label" indications)? **NO**
2. Has the project received funding (e.g. federal, industry) to be conducted as a human subjects research study? **NO**
3. Will any project activities take place outside of Mayo Clinic? **NO**
4. Does the project involve prospective assignment of patients to different procedures or therapies based on a predetermined plan such as randomization? **NO**
5. Will the project occur regardless of whether individuals conducting it may benefit professionally from it? (If you couldn't publish would you still do it?) **YES**
6. Is this project designed with the intent to contribute to generalizable knowledge? In other words, is the primary intent to contribute to the field of study and benefit other researchers? **NO**
7. Is the primary intent of the project to specifically improve an institutional process with the intent of the conclusions to be most directly applicable to Mayo Clinic? **YES**
8. Will patients or personnel be exposed to additional discernible risks or burdens beyond those of standard of care? **NO**

Should you have questions regarding the outcome of this submission, please contact the IRB Knowledge and Navigation through the Research Service Center at 6-4000

Mayo Quality Academy provides quality improvement education across the enterprise.

Resources for publication of quality improvement projects may be found at:
Office of QI Scholarship >> SQUIRE (Standards for Quality Improvement Reporting Excellence)

Appendix Q

Pre/Post Pilot Surveys

Pre-Pilot Survey Instructions

By completing this survey, you consent to your deidentified responses being used in data analysis and dissemination of findings. Dissemination may occur within the organization and outside of the organization and may be published in professional journals. A limited amount of demographic data will be collected from you. If too few responses are received from a specific unit, further steps will be taken to ensure confidentiality of responses. Your responses will be stored in a secure database, and aggregation of data will occur prior to dissemination. Your nursing leadership team does not have access to individual responses.

Please fill out the survey thinking about the process and forms your unit currently uses for orientee progress reviews. We are going to trial a new progress review form and want to determine if we are able to make the following changes: Improve communication between the preceptor and the NES regarding orientee's clinical judgment, enhance preceptors' abilities to objectively evaluate their orientee's clinical judgment, and increase the value preceptors and NESs find in the progress review process. For the sake of this survey, the following definitions apply:

- *Progress review form*: The form the preceptor fills out on an orientee's progress prior to or during a progress review with the nursing leadership team.
- *Progress review process*: The formal meeting between the preceptor, orientee, and nursing leadership team (e.g., NES and nurse manager) where the orientee's strengths and areas for improvements and progress through the orientation are discussed.
- *Objectively*: Evaluating an orientee in a way that is not influenced by personal feelings or opinions but rather on criteria defined by your progress review form, TSAM, or other source identified by your nursing leadership team.
- *Value*: Your perception of what the progress review process contributes to helping an orientee improve and successfully complete orientation, such as clear areas for improvement and a clear plan for the preceptor and orientee to follow to address those areas.

Pre-Pilot Unit Preceptor Survey Questions

1. I have precepted at least one staff RN orientee in the past year.
    - Yes
    - No (If no, do not continue survey)
2. The current progress review form increases my confidence in my ability to describe specific performance improvement areas for my orientee.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree

3. The current progress review form improves the clarity of the documented orientation plan.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
4. I use the current progress review form to objectively evaluate my orientee's clinical judgment skills (ability to notice, interpret, respond, and reflect).
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
5. Using the current progress review form, I evaluate my orientee similarly to other preceptors on my unit.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
6. The current progress review form enhances the value of the documented progress review.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
7. I value the current progress review process.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
8. Experience as registered nurse (in years):
    - 0 - 2
    - > 2 - 3
    - > 3 - 5
    - > 5
9. Years on your current unit:
    - 0 - 2
    - > 2 - 3

- > 3 - 5
- > 5

10. Years as a preceptor on your current unit:
    - 0 - 2
    - > 2 - 3
    - > 3 - 5
    - > 5
11. Age:
    - _____ (type in response in whole years)
12. Education level as a nurse:
    - Associate's/diploma
    - Bachelor's
    - Master's or doctorate
13. Which type of care area do you work in?
    - Ambulatory/Radiology
    - General inpatient care
    - Intensive care

Pre-Pilot Unit NES Survey Questions

1. The current progress review form increases my confidence in my preceptor's ability to describe specific performance improvement areas.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
2. The current progress review form improves the clarity of the documented orientation plan.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
3. The current progress review form improves my preceptors' abilities to objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect).
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree

4. Using the current progress review form, I can objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect) during progress reviews.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
5. The current progress review form enhances the value of the documented progress review.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
6. I value the current progress review process.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
7. Years of experience as a NES:
    - 0 - 2
    - > 2 - 3
    - > 3 - 5
    - > 5
8. Years of experience supporting your current unit(s):
    - 0 - 2
    - > 2 - 3
    - > 3 - 5
    - > 5
9. What type of care area(s) do you support? (Select all that apply)
    - Ambulatory/Radiology
    - General inpatient care
    - Progressive inpatient care
    - Intensive care

Post-Pilot Survey Instructions

By completing this survey, you consent to your deidentified responses being used in data analysis and dissemination of findings, which may include use of direct quotes from open-ended question responses. Dissemination may occur within the organization and outside of the organization and may be published in professional journals.

Please fill out the survey thinking about the new LCJR progress review form and process your unit has been trialing for orientee progress reviews. We want to determine if we were able to make the following changes: Improved communication between the preceptor and the NES regarding orientee's clinical judgment, enhanced preceptors' abilities to objectively evaluate their orientee's clinical judgment, and increased the value preceptors and NESs find in the progress review process. For the sake of this survey, the following definitions apply:

- *Progress review form*: The form the preceptor fills out on an orientee's progress prior to or during a progress review with the nursing leadership team.
- *Progress review process*: The formal meeting between the preceptor, orientee, and nursing leadership team (e.g., NES and nurse manager) where the orientee's strengths and areas for improvements and progress through the orientation are discussed.
- *Objectively*: Evaluating an orientee in a way that is not influenced by personal feelings or opinions but rather on criteria defined by your progress review form, TSAM, or other source identified by your nursing leadership team.
- *Value*: Your perception of what the progress review process contributes to helping an orientee improve and successfully complete orientation, such as clear areas for improvement and a clear plan for the preceptor and orientee to follow to address those areas.

Post-Pilot Unit Preceptor Survey Questions

1. I have used the LCJR to evaluate an orientee in the last three months.
    a. Yes
    b. No (If no, do not continue survey)
2. The current progress review form increases my confidence in my ability to describe specific performance improvement areas for my orientee.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
3. The current progress review form improves the clarity of the documented orientation plan.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
4. I use the current progress review form to objectively evaluate my orientee's clinical judgment skills (ability to notice, interpret, respond, and reflect).

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

5. Using the current progress review form, I evaluate my orientee similarly to other preceptors on my unit.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
6. The current progress review form enhances the value of the documented progress review.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
7. I value the current progress review process.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
8. Describe how this tool has changed the communication between you and your NES and you and your orientee.
9. Describe how this tool has changed your evaluation of your orientee's clinical judgment skills (ability to notice, interpret, respond, & reflect).
10. Describe how this tool has changed the progress review process (e.g., identifying strengths and areas for improvement, creating a specific plan to address areas for improvement).
11. What has been your experience in using the new progress review tool and progress review process with nurse orientees?[a]
12. What are the advantages of the tool and process? The disadvantages?[a]

Post-Pilot Unit NES Survey Questions

1. The current progress review form increases my confidence in my preceptor's ability to describe specific performance improvement areas.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
2. The current progress review form improves the clarity of the documented orientation plan.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
3. The current progress review form improves my preceptors' abilities to objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect).
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
4. Using the current progress review form, I can objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect) during progress reviews.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
5. The current progress review form enhances the value of the documented progress review.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
6. I value the current progress review process.
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree

7. Describe how this tool has changed the communication between you and your preceptors and you and your orientees.
8. Describe how this tool has changed the clarity of the documented progress review and orientation plan.
9. Describe how this tool has changed your evaluation of orientees' clinical judgment skills (ability to notice, interpret, respond, & reflect).
10. Describe how this tool has changed the progress review process (e.g., identifying strengths and areas for improvement, creating a specific plan to address areas for improvement).
11. What has been your experience in using the new progress review tool and progress review process with nurse orientees?[a]
12. What are the advantages of the tool and process? The disadvantages?[a]

[a]Questions modified from Nielsen et al. (2016) with permission (Appendix Q).

Appendix R

Permission to Use Semi-Structured Interview Questions

Hello Lydia-

This sounds like very exciting work! I cannot give permission for LCJR modifications, but you are welcome to use and modify the semi-structured interview prompts.

I hope that you will let us know about the outcomes of the project. I am happy to provide advise as specific questions arise.

Best wishes with your doctoral studies!

Sincerely,

Ann

Ann Nielsen, PhD, RN

Associate Professor of Clinical Nursing

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Office- 503-494-0072

Pronouns- She, her, hers

Appendix S

Pilot Unit Orientee Information Tracking Sheet

The NES should collect the following data on each orientee who is evaluated using the LCJR. Do not include any other information which could be used to identify the orientee. Add additional lines as necessary based on the number of orientees.

Orientee 1:

_____ Years of Experience as RN

_____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Orientee 2:

_____ Years of Experience as RN

_____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Orientee 3:

_____ Years of Experience as RN

_____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Orientee 4:

_____ Years of Experience as RN

_____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Orientee 5:

_____ Years of Experience as RN

__ _____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Orientee 6:

_____ Years of Experience as RN

_____ Current Degree Level (Associate, Bachelor's, Master's, Doctorate)

Appendix T

Communication to Participants

Lasater's Clinical Judgment Rubric SBAR

S: We are adding Lasater's Clinical Judgment Rubric (LCJR) to your work unit as a tool to help evaluate an orientee's clinical judgment during orientation.

B: We have not had any standardized process for progress reviews across the institution. No theoretical background supported our work. NES's and preceptors struggled to support orientees with clinical judgment in the past.

A: We have TSAM and experience trackers to aid in determining progress through orientation tasks and workflows. These tools work very well for their intended purposes. We often hear "my orientee just doesn't get it" from preceptors and we have no shared language with which to describe these challenges. As a result, we are challenged to create targeted interventions to help an orientee to be more successful more efficiently.

R: We recommend the use of the LCJR to create a common language between orientees, preceptors, and NES's regarding clinical judgment; to facilitate objective evaluation of orientee's clinical judgment; and to facilitate the creation of targeted learning strategies to help orientees build clinical judgment skills.

Pre-Pilot Survey Reminder E-mail Script

You received a link in your email for a survey on [DATE]. This is a short, 5-minute survey asking for your perception on how the current orientation progress review form and process is working. We are going to trial a new progress review form and want to determine if the new form is able to make the following changes: Improve communication between the preceptor and the NES regarding orientee's clinical judgment, enhance preceptors' abilities to objectively

evaluate their orientee's clinical judgment, and increase the value preceptors and NESs find in the progress review process. Please take a few minutes to complete the survey using the link in the original email or the one below.

Post-Pilot Survey Reminder E-mail Script

You received a link in your email for a survey on [DATE]. This survey will take you approximately 10 minutes and is asking for your perception on how the piloted LCJR orientation progress review form and process is working. We want to determine if the new form (LCJR) was able to make the following changes: Improve communication between the preceptor and the NES regarding orientee's clinical judgment, enhance preceptors' abilities to objectively evaluate their orientee's clinical judgment, and increase the value preceptors and NESs find in the progress review process. We are also asking you to answer some open-ended questions regarding how the use of the tool went for you. Please take some time to answer these as thoroughly and honestly as possible so we can make changes as appropriate in future trials. Please take a few minutes to complete the survey using the link in the original email or the one below.

Project Infographic Posted on Units

Appendix U

Project Timelines

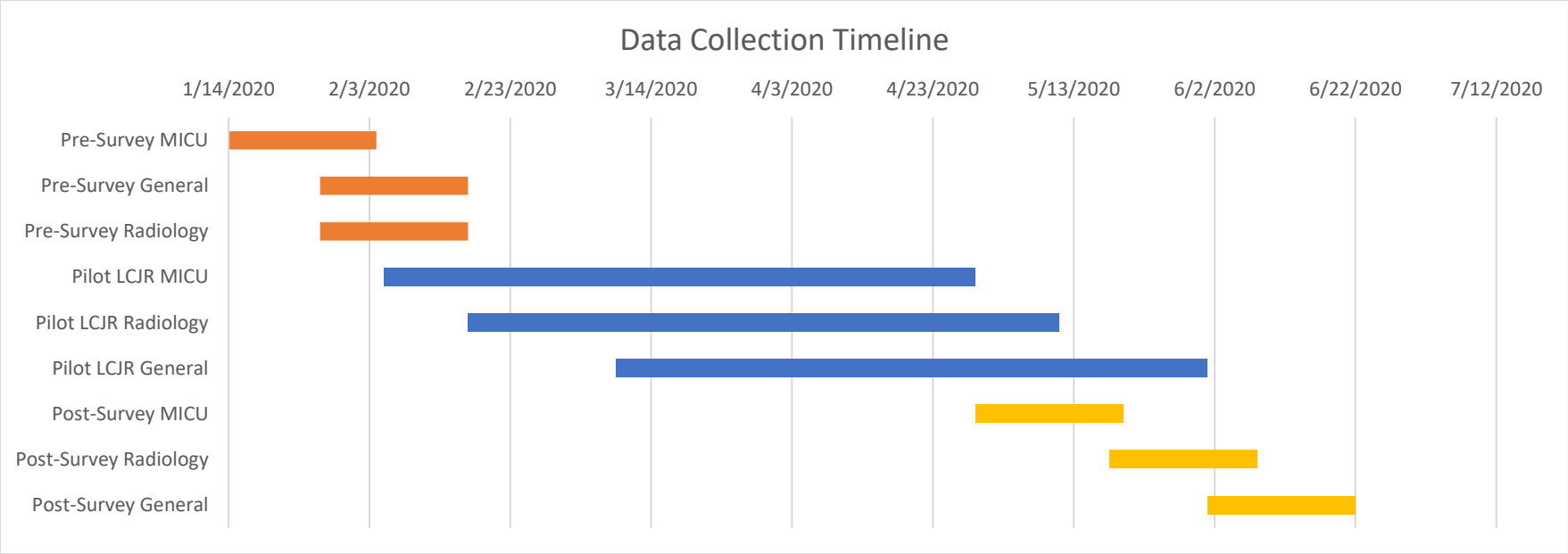

Figure U1. Data collection timeline. Orange indicates pre-implementation data collection, blue indicates the pilot period, and yellow indicates post-implementation data collection.

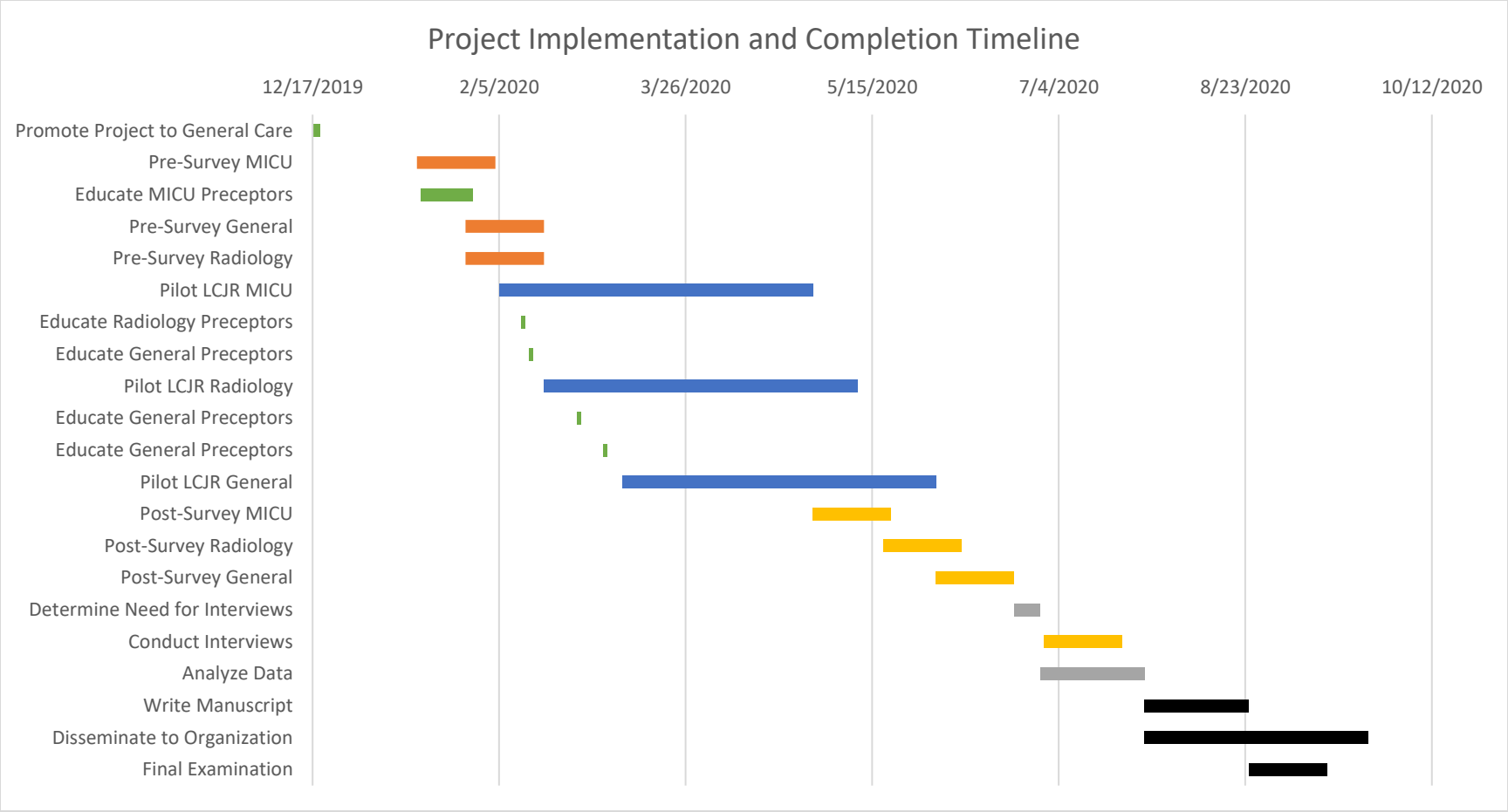

Figure U2. Timeline for project implementation, pilot period, data analysis, and dissemination. Green indicates education and communication activities regarding the pilot project. Orange indicates pre-implementation data collection, blue indicates the pilot period, and yellow indicates post-implementation data collection. Gray indicates data analysis activities, and black indicates dissemination activities.

Appendix V

Pilot Survey Questions and Associated Outcomes

Table V1.

Pre/Post-Pilot Survey Questions and the Associated Outcomes

Outcome Being Measured	Preceptor Survey Question	NES Survey Question
Shared Language	The current progress review form increases my confidence in my ability to describe specific performance improvement areas for my orientee.	The current progress review form increases my confidence in my preceptor's ability to describe specific performance improvement areas.
	The current progress review form improves the clarity of the documented orientation plan.	The current progress review form improves the clarity of the documented orientation plan.
Objectivity	I use the current progress review form to objectively evaluate my orientee's clinical judgment skills (ability to notice, interpret, respond, and reflect).	The current progress review form improves my preceptors' abilities to objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect).
	Using the current progress review form, I evaluate my orientee similarly to other preceptors on my unit.	Using the current progress review form, I can objectively evaluate an orientee's clinical judgment (ability to notice, interpret, respond, & reflect) during progress reviews.
Value	The current progress review form enhances the value of the documented progress review.	The current progress review form enhances the value of the documented progress review.
	I value the current progress review process.	I value the current progress review process.

Table V2.

Post-Pilot Open-Ended Questions and Associated Outcomes

Outcome Being Measured	**Preceptor Survey Question**	**NES Survey Question**
Shared Language	Describe how this tool has changed the communication between you and your NES and you and your orientee.	Describe how this tool has changed the communication between you and your preceptors and you and your orientees. Describe how this tool has changed the clarity of the documented progress review and orientation plan.
Objectivity	Describe how this tool has changed your evaluation of your orientee's clinical judgment skills (ability to notice, interpret, respond, & reflect).	Describe how this tool has changed your evaluation of orientees' clinical judgment skills (ability to notice, interpret, respond, & reflect).
Value	Describe how this tool has changed the progress review process (e.g., identifying strengths and areas for improvement, creating a specific plan to address areas for improvement).	Describe how this tool has changed the progress review process (e.g., identifying strengths and areas for improvement, creating a specific plan to address areas for improvement).
Other	What has been your experience in using the new progress review tool and progress review process with nurse orientees? What are the advantages of the tool and process? The disadvantages?	What has been your experience in using the new progress review tool and progress review process with nurse orientees? What are the advantages of the tool and process? The disadvantages?

Appendix W

Cost Analysis

Item	Factors Used to Estimate Cost	Estimated Cost Factors	Estimated Cost
Online education module	• Software to create module (Adobe Captivate)	• $1299 (perpetual license)[1]	• $1299
	• Education technology NES time (8 hours)	• $0 (part of normal work duties)	• $0
	• SAP SuccessFactors Learning management system	• $85/year/employee[2] (based on 164 NESs and preceptors)	• $14,025.00
NES training on LCJR	• Average NES salary (based on 8 hours of total training)	• $0 (part of normal work duties)	• $0
Preceptor training on LCJR	• 1-hour training session based on average hourly wage of a preceptor with 5 years of experience	• $38.31/hour/preceptor (based on 159 preceptors)	• $6,091.29
Survey administration	• NES salary to build, administer survey	• $0 (part of normal work duties)	• $0
	• REDcap software	• $0[3]	• $0
Statistical analysis of survey data	• Statistician consult (based on 4 hours of statistician time for initial and continued support)	• $42.00/hour[4]	• $168.00
			• $0
	• Statistical software	• $0 (use Excel or Mayo Clinic-provided software)	
Advertising pilot	• Posters for pilot units (25 12" x 18" posters)	• $249.75[5]	• $249.75
	• Electronic newsletter items	• $0	• $0
	• In-person advertisement at unit meetings	• $0	• $0
Printed LCJR tools	• Estimate per copy based on 500 copies	• $170 ($0.34/copy)[6]	• $170.00
		Total Estimated Cost[7]	$22003.04

[1]https://www.adobe.com/products/captivate/buying-guide.html

[2](https://www.pcmag.com/review/338545/sap-successfactors#targetText=Starting%20at%20%248%20per%20user,organized%20and%20full%20of%20features.)

[3]https://projectredcap.org/partners/join/

[4] https://swz.salary.com/salarywizard/Statistician-III-Hourly-Salary-Details-Rochester-MN.aspx?&edu=EDLEV5&yrs=5.5
[5]https://www.staples.com/services/printing/custom-posters
[6]https://documents.staples.com/ASP1/SmartStore.aspx?QxwAkrpHdoTpJQ4/NUWILGhXVTrEwdxHw8Lxmdsq0ed5ORARK3ida94N9LnWhlVT#!/Storefront/Color/1205/product/Customize
[7]All costs in table are approximate and are covered within the normal DON operating budget. No additional funding was requested or required for this project.